1: Rattray E, G-5 (ca. 1920)1932
FE11 Tallensi FE11

Purification of the land when some one is Sold: When a person sells
567 a son or a brother, he may not tell the *Ten'dan'*, nor will the latter take
783 any notice, but sooner or later some misfortune will befall the vendor,
793 or some of his family, and on consulting the *bay* (soothsayer) he will be
593 informed that his having sold some one is the cause; he will be advised to give a cow, sheep, or goat to the *Ten'dan'*. He will give the offering to the land, saying: 'My father, there was a famine, and some one sold his own son, and he has brought these things. Receive them and prevent headache and belly-ache, and give them to the land.'

769 I asked my informant why he used his father's spirit as an inter-
793 mediary. He replied, 'My ancestor knew the land before myself; all
783 our ancestors are in the ground, which is a *bagere'* (shrine).

Duties of the Ten'dan' in Connexion with the Making of a New Farm:
793 The man about to make a new farm will sacrifice to his ancestor through
782 the head of his compound. He will then take a fowl to the *kpasodan'*[1]
241 (the tenant of that land) who will give the offering to his ancestor.
427 This tenant had originally approached the *Ten'dan'* before acquiring the land, and the sub-tenant, therefore, apparently need not again do so. A *Ten'dan'*, on giving land to any one for the first time, will ask for fowls (not white ones), one for his father, one for the land. 'After sacrificing, I will conduct the man to the land, take a hoe, break the ground, and tell the man that he may begin cultivating. I show him the boundaries of his farm. I need not tell him that anything he finds on the land is mine; he knows that already. He knows, too, that if he ever refuses to allow any one to pass over his land, or if he is greedy about his crops, not giving some to those who are hungry, I have the power to drive him from the land.'

793 'The *Ten'dan'* makes the land good.' 'The *Ten'dan'* owns (or rather
425 owned, for in many places I found this ancient prerogative usurped by the Chiefs) all lost cows, sheep, goats, donkeys, fowls, iron, hoes, axes, and brass ornaments. A *Ten'dan'* is never succeeded by his brother
[292] or by his son. This hat [referring to the distinctive string hat worn by *Ten'dan'*] is not a rich thing. Any one in a section may become *Ten'dan'*.'

Again: 'When the Mampruse, under *Misore*, first came here, they captured a man near a well who said he was the *Ten'dan'* of Gbeo. Later on *Misore* found other *Ten'dan'* at Bare, Ka, and Kundugu. He did not kill them, but appointed them to sacrifice to the land and show him her *kyibir* (avoidances, Nankane *kyisiri*), and rights—avoidance of blood, right of *Ten'dan'* to lost property or anything found on the

[1] Nankane, *Kuosdana*.

I: Rattray E, G-5 (ca. 1920)1932
FE11 Tallensi FE11

some of the water from this calabash on the ground, saying: 'Your day is drawing near, and I wish to pour water for you that the corn may be good. Your moon stands.' A little only of the water is poured out, but the remainder is kept until the next moon, which is the *Daa mey* (or 'real' *Daa*). The first water is called *Ko'-beet* (bad water); the water poured out later is called *Ko'soy* (good water). Until the *Ten'dan'* of Bade has performed this ceremony no one may begin to hold the custom; we dance thirty nights at the grove. Seven days after the bad water is poured out, beer and a fowl are given to the land with the words:

'*Misore* and his father wish to come forth; receive, and let the women and children come out to dance and let the men meet them there. Prevent headache and belly-ache and may everything bad on the land (snakes, scorpions) hide away.'

As they dance they sing: *La pug dill* (the corn is blooming).

At the end of thirty days the Bade *Ten'dan'* pours out the rest of the water on the ground, saying: 'This is the good water I am pouring to-day; may the land become good; may women bear children and the corn become good.' He pours out the whole of the water. The *Daa mey* has now arrived and the people dance for fifteen nights, singing: *Laa moo zimi* (It [the corn] is red). Every one assembles by the full moon at the grove called *Pusig* (the name of a tree now no longer standing).

The *Ten'dan'* of Gbeo sacrifices at *Misore's* grave.[1] When he reaches the grove, he takes some beer, flour, and a fowl, which the Chief of Tɔngo has given him, and sacrifices at the spot where the *pusig* tree used to stand, saying to the land: 'The Chief gives me these things for you because the days (of the festival) are ending. We wish to return the drums to the house; allow the women and children to sleep in peace; allow the men to go hunting.' He then makes the sacrifices.

The drums, called *Tusgunwaa*, are kept by the Chief and are never brought out except at this ceremony or at a death. '*Daa* is a dance on the land that it may know all is well.'

Formerly the day of sowing was common to all, so all harvests became ripe at the same time. Now people plant independently, so that the reaping is done at different times. The *Da koom* may not be held until all the *nara* is cut, so that the date is not now constant.

[1] See *History*, Chapter XXXIII.

2: Fortes E-5 (1934-1937) 1945
FE11 Tallensi FE11

in serious soil erosion due to over-cultivation and in the diminution of uncultivated bush land, so that firewood and other sylvan products cannot be found within six or more miles of the settlements.

District	*Area*	*Population*	*Density per sq. mile*
Navrongo . .	1,551	120,870	77·96
Zuarungu . .	781	133,981	171·55
Kusaasi* . .	1,227	151,715	123·64
Mamprusi* .	2,719	61,520	22·62
Dagomba*. .	12,257	191,956	15·66

* Partly in Mandated Territory of Togoland.

In spite of the general similarity of climate and vegetation in the Sudanese Zone, local variations produce significant ecological differences. This is shown in the Northern Territories of the Gold Coast by the differences in agriculture north and south of the Gambaga scarp. The steep scarp marks both a geological and an ecological line of division. South of it the rock formations are of sandstone and shale, north of it granite, quartz, and greenstone predominate. South of the scarp a form of shifting cultivation is customary, and yams (*Dioscorea* spp.) are grown on a large scale side by side with millet (*Pennisetum typhoides*, var.), guinea corn (*Sorghum vulgare*), and maize (*Zea mays*). North of it yams will not grow easily and cereal crops form the staple food supply.[1]

The relative scarcity of population in the yam-growing districts compared with the congested areas north of the White Volta may be due to unknown historical and cultural factors, but endemic diseases have undoubtedly impeded population growth. While malaria, yaws, and leprosy, to mention only the commonest enemies of native health, are widespread throughout the Northern Territories of the Gold Coast, sleeping-sickness is also endemic throughout the Mamprusi and Dagomba districts. In the central sectors north of the scarp sleeping-sickness occurs only sporadically near the rivers.

Topographical differences also appear to influence the distribution of population. The high plateau which stretches from the White Volta northwards is more suited for permanent habitation than the low-lying flats which make up the greater part of Mamprusi and Dagomba. In the wet season they turn into quagmires, in the dry season they are arid tracts seriously short of water-supplies. North of the White Volta numerous streams and small rivers combine with the relatively greater elevation to drain the plateau effectively during the heavy rains; and though surface water becomes scarce in the dry season, shallow pits generally provide sufficient water for normal needs.

The district of Zuarungu is a typical portion of the Trans-Volta plateau. A number of bouldery hills from 100 to 500 feet high are scattered over its undulating surface. The most conspicuous are the Tong Hills, a small range stretching for about four miles just north of the river. It adds an

[1] Cf. Fortes, M. and S. L., 'Food in the Domestic Economy of the Tallensi', *Africa*, ix. 2, 1936; and Lynn, C. W., op. cit.

2: Fortes E-5 (1934-1937) 1945
FE11 Tallensi FE11

146 No biological or medical research has hitherto been carried out among
164 the Tallensi or their nearest neighbours. Hence it is impossible to determine how far their physique, efficiency, and standard of health have been affected by their low scale of nutrition. To the lay observer they do not appear to be stunted or to show a high incidence of physical defects. They are fortunate in living outside the sleeping-sickness zone, but the common endemic diseases of the region are rife among them. The
[657] natives have no reliable remedies for these diseases, and the Government dispensary at Zuarungu, the only regular medical service provided for the district, cannot cope with more than a fraction of the sick. From the point of view of physical health the Tallensi of to-day are probably little better off than their fathers were.

291 Native habits of dress and personal hygiene are doubtful assets from
515 the point of view of health. Children go stark naked till adolescence, in the case of boys, and till their first pregnancy in the case of girls. Women go naked except for the perineal band. Men always wear a loin-cloth for the sake of modesty, but it is usually grimy with accumulated dirt. In addition, a man usually wears a goatskin or sheepskin, or a ragged remnant of an old tunic or cloth slung across his back, as his working garb; clothes are worn only on special occasions.

515 Whether or not these customs of dress are injurious, the indifference of the Tallensi to bodily cleanliness cannot be beneficial to their health. By European or Coast African standards, the Tallensi and their neighbours are dirty people. They wash only rarely, especially in the dry season. This is due, in part, to the scarcity of water and to the fact that soap is still an expensive luxury, but also in some measure to native ideas of cleanliness. Tallensi do not object to body dirt. Only young dandies and marriageable girls take pride in a 'clean skin' as a mark of beauty and wash regularly. It is not surprising, therefore, that the most superficial wounds usually fester.

364 The sanitary habits of the natives are equally primitive. A homestead is usually kept fairly clean indoors, but the live-stock yard is inside the homestead, and the accumulation of manure there, as well as the refuse midden just outside the entrance, are the breeding-places of swarms of
[514] flies. Then, also, the natives defecate just outside their homesteads. The stench around a Tale homestead in the rainy season is enough to shake
● [240] the hardiest anthropologist. These noisome accompaniments of home-life do not trouble the natives, who look upon animal manure and human excrement as essential fertilizers for their farms.

181 In spite of these hardships and hazards Tallensi set a very high value
183 on their culture and way of life. In his workaday life the native gives an impression of being a steady, sober person with a good grip of himself. He can work hard if necessary, but he can enjoy idleness too. Wasteful and extravagant at times, especially on certain ceremonial occasions, he is normally frugal and abstemious. A keen sense of property and of the value of material goods goes with generosity to kinsfolk and friends. Though he is no stickler for the letter of custom, he attaches great importance to social rights and obligations. Respect for social and genealogical superiors is a strong point of Tale etiquette, but natives are rarely

2: Fortes E-5 (1934-1937) 1945
FE11 Tallensi FE11

obsequious among themselves. With all their respect for custom they are not its slaves. Individual initiative, ambition and independence of action, within the limits imposed by their social and material order, are common. 181 183

Tallensi do not question their traditional ritual values, but there is an element of what we should call rationalism in their religious attitudes. Their ancestor cult, an elaborate body of beliefs, rites, and ceremonies, is minutely woven into their everyday existence, but it does not pursue them with phantom terrors. On the contrary, it is the principal means provided by Tale culture for keeping the individual and the group on an even keel.

Stability; tolerance of physical hardship and discomfort as well as of human frailty and idiosyncrasy; a reasonable degree of conformity; a tenacious attachment to life fortified by an elaborate ancestor cult—these characteristics of Tale culture strike the observer at the outset. On the surface the Tale ideal is to have enough to eat, to be a successful parent, and to live at peace with one's fellows. Closer acquaintance, however, reveals hidden undercurrents. Beneath the overt stability and integration of the social order lie continuous tensions. Indeed the stability of Tale society can only be understood as a product of these tensions, created and maintained by the social processes that resolve them. Again, the natives' keen sense of the importance of social obligations hides a tendency to aggressive self-assertion. Tallensi are quick to anger if they feel themselves wronged, and are good haters. Their usual spirit of good-natured tolerance masks a proneness to suspicious watchfulness, and their frugality covers a spendthrift streak. These contradictions are subtly revealed in their religious practices. The strength of their ancestor cult rests not only on its predominant role as an integrating force in their social structure, but also on its profound psychological value for the individual. Tallensi react to misfortune with strong anxiety and guilt feelings from which they find a refuge in their ancestor cult.

This sketch of how the Tallensi strike a European calls for qualifications. It is couched in terms of our cultural values in order to help us to visualize these people in terms of a familiar vocabulary and automatic mental images. Objectively, from the standpoint of the people themselves, the value judgements implicit in our description lose their meaning. What we see as their poverty, dirtiness, poor health, and rudeness of culture they accept with equanimity as the normal conditions of their life. They have no grievance or shame about them. Being common to everybody, these conditions do not create rifts in their society or maladjustments in the individual as they do with us. They are in one respect simply part of the atmosphere within which the culture of the Tallensi (and their neighbours) develops its own richness and amplitude; in another, the material of significant themes in that culture.

Every aspect of Tale social life is conditioned by the fact that they are a primitive peasantry. There is no division of labour apart from that of the sexes. Censuses taken in various parts of the country show that not less than 95 per cent. of the adult males are wholly dependent on agriculture for their livelihood, and all of the odd 5 per cent. are partially dependent on the same source. Craft specialists work at their crafts only 181 241 463

2: Fortes E-5 (1934-1937) 1945
FE11 Tallensi FE11

in their spare time, and chiefly in the dry season when there is no farm work. They are exceedingly few in numbers—one or two in a settlement—and their work is of mediocre quality. The only blacksmiths in Taleland are about a dozen men of the Sakpee clan of Tenzugu, and only one of them derives a substantial part of his livelihood from his craft. A leather-worker or two, a potteress, a sewer of caps, may be found in almost every settlement. Some men and women who are more skilful than their neighbours at making articles of common use such as hen-coops, baskets, bows, adze-shafts, &c., are in the habit of making a few for sale every dry season. The only specialized occupation is that of the diviner, and it, also, is a part-time occupation in addition to farming, though a popular diviner, making perhaps a shilling or eighteen pence a day, may farm less land than he normally would. Diviners are numerous. There may be as many as ten or twenty in a large settlement, but only one or two of them will earn more than a few pence a day by divining.

British Rule and Contact with Western Civilization

Until the time of my first visit to Taleland the natives had been very little influenced by the agencies of British government and of European civilization that are active in these parts. The main roads skirt Taleland so that the flow of north- and south-bound traffic by-passes the largest part of the area. Nevertheless, these roads have served to open up Taleland to a wider sphere of intercourse with other parts of the Gold Coast than was possible twenty years before. Political and social conditions made it impossible for people to travel freely beyond a radius of a few miles from their own settlements in former days. To-day young men and even women go in increasing numbers every year, in the dry season, to Tamale, Kumasi, or the coast towns. Some go to visit friends or relatives, some carry fowls for sale, others go as seasonal labourers, and others go to work abroad for a term of years. In 1923 the Administration of the Northern Territories reluctantly agreed to assist in the recruitment of labour for the mines and cocoa farms of Ashanti and the colony. The experiment failed and was soon abandoned. Nowadays labour migration from the Northern Territories is entirely voluntary. It has become linked up with the normal economic life of the natives. Whereas, in former years, a young man moved out temporarily to the periphery of settlement on account of a shortage of land in his natal community, nowadays he often goes to Ashanti or the mines as a labourer. The cessation of agricultural activity in the dry season makes it easy for a young man to get away for a few months without loss to the routine of farming.

Economic incentives, which the natives sum up as 'the desire for money', therefore lie behind much labour migration in the Northern Territories. And the value of money may be gauged from the fact that a hen could be bought for 6*d.* to 1*s.*, a cow in good condition for £2. 10*s.*, and a dish of porridge enough for a satisfying meal for 1/10 of a penny in any market in 1934–7. But there are other incentives as well. Curiosity, and the desire to see the places and experience the life which those who return from a stay abroad describe to their fellows at home, stimulate many a youth to go south for a short or long period. And friction with

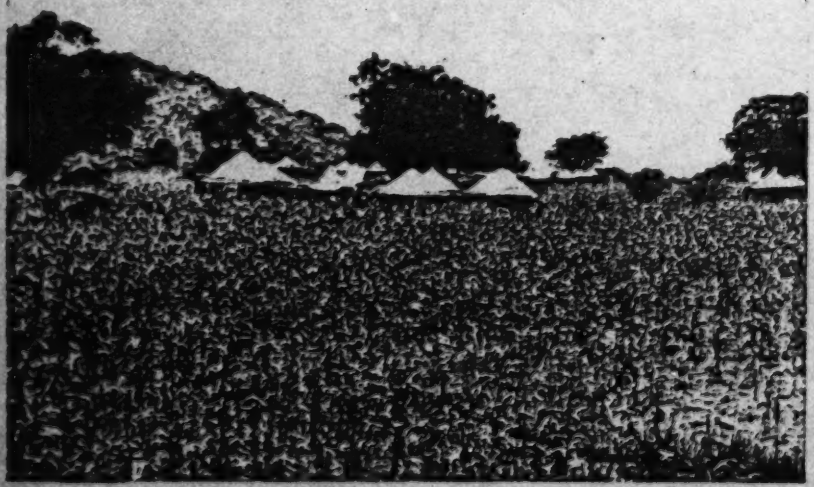
2: Fortes E-5 (1934-1937) 1945
FE11 Tallensi FE11

[facing p. 16]

PLATE I

241
361

(*a*) Outskirts of a Tale settlement in the late dry season. In the distance (right) a sacred grove (*tɔŋgban*).



(*b*) View of a Tale settlement about the middle of the rainy season.

2: Fortes E-5 (1934-1937) 1945
FE11 Tallensi FE11

621 421 The natives cannot imagine any tract of land or territory being totally unconnected with a human group. Most tracts of uninhabited bush are 'owned' by chiefs, who have ritual jurisdiction over hunting rights. But some tracts of untilled and uninhabited land (e.g. between Biuŋ and the river) appear to have no 'owners', either secular or ritual. The natives say the 'owners' have died out. The land did at one time have a connexion, perhaps only a ritual connexion, with a human group, and this connexion remains mystically effective still. Such areas of *wasak*, as the natives call them, are economically a free good. Anyone can come and build or cultivate there. But a man who does so will try to find some person or some clan to offer sacrifice to the Earth on his behalf, as the residuary legatee of the defunct 'owners', through local or clanship ties with them. If he fails to find anyone, he will consult a diviner to find out for himself where the sacred spots are in this stretch of *wasak* and make the sacrifices himself, thus creating a moral bond with it. Nowhere is the Earth inert; and its mystical powers are a reflex of its relations with human groups.

The three functionally differentiated aspects of man's relations to territory in Taleland are interconnected in Tale thought and custom in a rather complex way, and local differences blur the general principles. The simplest approach will be from the starting-point of land used for agricultural purposes. This is by far the most important economic use of land, but not the only one. There are few products of nature on the earth's surface that the natives do not make some economic use of, or rely on for other practical purposes. It is easy to see, therefore, why the natural environment is built into the social organization and invested with values and meaning in the social philosophy and ritual beliefs of the Tallensi. Our analysis would lead to the same conclusions if we started from uncultivated bush (*moog*), for instance, the source of essential products such as firewood, wild fruits, shea nuts, thatching grass, reeds for matmaking, rafters, medicine roots, and so forth, as well as of game and wild fowl.

Farm-land and Subsistence

311 Land means many things to the Tale farmer. He distinguishes, firstly, between the soil (*tam*) and the arable, or tilled land (*kuob*). He recognizes and takes into account different kinds and qualities of soil. This is something independent of the tillage of the land; and, conversely, cultivation (*kuo*, from *kɔ*, to hoe) turns any kind of soil (*tam*) into arable (*kuob*). Tilled land, again, is classified, without reference to soil qualities, by its location and by the kind of crops grown on it. Thus, every farmer has one or more home farms (*saman*) in the settlement and one or more bush farms (*poog*) in an area free of human habitations. In addition, a particular farm is merely a parcel of land, a bit carved out of a *teŋ*. In this context a *teŋ* is a stretch of territory in its useful, material aspect. One can speak of such and such a *teŋ* as being very fertile, or as having a sandy soil (*tambiihug*).

241 731 Farming is the basis of the Taleŋ's livelihood. A failure of crops, nowadays, spells widespread privation. Thirty years ago it would have brought famine. Tallensi often talk of this, especially when unpropitious

2: Fortes E-5 (1934-1937) 1945
FE11 Tallensi FE11

weather causes anxiety about the crops; for famine is the greatest social calamity they can imagine and is a very real menace. I have heard people speak of the last great famine that swept the country, some forty years ago, with a poignancy that made one realize how deeply dread of famine is stamped into the native's outlook on life. 'It is our black man's thing this (*ti gbansablɛg ycl n-a-de*)', they say, 'from the days of our fathers and forefathers'—or, as we might put it, it is a law of nature for the black man. 'The white man has saved us. If there is hunger now we can buy grain from Mampurugu or Kusaa.' Sombrely they describe how in times of famine people ate grass and weeds fit only for animals, and died on the footpaths. Men deserted wife and child to seek sustenance among distant relatives who had a little food. They took their own children to sell into slavery among the Mamprusi for food. The social order broke down completely.

Sufficient crops of the staple cereals mean survival, good crops mean joy to the Tallensi. They show it in the Harvest Festival that marks the end of the farming year. If the harvest is poor, they say, people attend the dances perfunctorily and dance without enthusiasm. But in a good year, as I saw in 1936, no one can be held back from the dances. Young mothers steal out to them with their babes in their arms, sedate elders fling themselves into the rout with the zest and energy of striplings. There is a general feeling of elation. 'Our bodies are full of strength (*ti nɛŋ kpɛŋŋa*)', is how the natives describe it.

A successful farming year not only provides for the satisfaction of the fundamental physical needs of existence; it gives security to the social order. There is ample evidence of this in the busy and cheerful atmosphere of the market-places, and, more significantly, in the spate of ceremonial activities that follows on a satisfactory harvest; for all Tale ceremonial activities express and fortify relationships of amity and interdependence. For the individual the physical well-being of himself and his dependants—sufficiency of food, good health, and the increase of offspring—is a sign that all is well with the social order. The ritual symbols in which the forces that shape Tale social organization and keep it on a steady course are objectified and made emotionally tangible go back to this fact of native experience. The stereotyped formula with which a prayer offered at any shrine is usually concluded epitomizes this: 'Grant that fields be farmed (fruitfully), that live-stock breed, that offspring be born, that (undisturbed) sleep be slept (*Kye ka kuo kɔ, ka guul guul, ka dɔyam dɔya, ka guom gbis*).'

Productive Efficiency and the Bounds set by Nature

Now what does the achievement of sufficiency of food and general physical well-being depend upon? It is quite clear, from the way the natives carry on their agricultural activities and the way they think and talk about them that, other things being equal, they consider skill and industry to be the main factors of efficiency. But variations in efficiency between a *pukpaa*, a slothful farmer, and a proper *kpa'at*, an industrious hoe-man, mean only a difference in their respective standards of consumption. One has rather less food and other goods than the other.

2: Fortes E-5 (1934-1937) 1945
FE11 Tallensi FE11

Whether there is food or famine, a bare sufficiency or a surplus for the majority of people, depends on other things than human efficiency. It depends enormously on the weather. Drought (*waar*) in the early months of the rainy season brings hunger; an erratic distribution of rainfall causes a poor harvest; an unusually violent tornado (*sanziug*), crushing and uprooting the young millet, produces a shortage. Locusts (*tinta'aba*) descending suddenly, inexplicably, on the half-grown crops and devouring them, ruin the most efficient farmer's work. These are public calamities beyond human control, and they are an ever-present danger. During my first tour in Taleland a long gap in the normal sequence of the early rains threw everybody into a state of foreboding. Men went about restlessly, waiting anxiously for a sign of rain. During my second tour locusts destroyed the crops in one part of the country. The grief and chagrin of those whose crops had suffered showed that they felt they had suffered an irreparable loss.

Another possible natural disaster which would destroy physical well-being and rend the social fabric is an epidemic of small-pox (*zinzaaŋ*) or of measles (*kasoo*).[1] Cases of *kasoo* occur every year and the mortality is high. I have heard of more than one family in which several children died of it in a week or two. Naturally the natives, who have no remedy for it, regard it with terror. The last small-pox epidemic (before 1937) occurred about a generation ago. The natives know that the white man's precautions will check any future epidemic, but they still dread the danger. For small-pox, when it comes, devastates social life. People stop visiting their kinsfolk and neighbours; stricken families are isolated by a wall of thorn bushes; those who die of small-pox are not even given proper burial but are interred in the midden heap or thrown into the uncultivated bush. At such times small-pox must be referred to by a euphemism. It is 'the chief' (*na'ab*), and a death due to it is 'the chief has bestowed a boon (*na'ab maalya*)'.

These are the ever-possible public calamities which defeat human effort and skill. Private dangers also threaten the individual farmer. A snake might bite him as he stoops to hoe; blight might destroy his millet but leave his neighbour's farms unaffected; sickness might lay him low or deprive him of the help of wife or son.

It must not be thought that the Tale farmer goes about in a permanent state of fear of these external dangers to his welfare and security. When things are going well he does not give a thought to them. Living, as they do, at a subsistence level that gives them no regular surplus over what they require to satisfy their normal wants, the Tallensi take no long-term precautions, either individually or collectively, against the dangers of starvation or pestilence. They have neither the technical means nor the social institutions for such measures. But these threats do materialize often enough for them to serve as the realities towards which Tale acts of ritual self-protection, both individual and collective, are directed. Tallensi do not believe that these ritual acts will prevent natural disasters

[1] From the natives' description of the symptoms, I think the sickness they call *kasoo* is probably measles, but I am not certain and I have not been able to obtain medical corroboration.

2: Fortes E-5 (1934-1937) 1945
FE11 Tallensi FE11

682 sacrifices of expiation or else 'their house—i.e. line of descent—is destroyed (*ba yiri ŋmaarəme*)' in retribution. This is the strongest sanction against homicide among the Tallensi. Whether it is intended or accidental, whether the victim is a clansman or a stranger, and has been slain at home or abroad, homicide is a sin against the Earth and must be expiated. But it is so grave a sin that it can, in fact, never be wholly atoned for. 'You cannot finish paying' the Tallensi say. It is a sin that pursues the wrongdoer's agnatic descendants for generations.

627 682 577 The Tallensi have no juridical machinery for taking penal action against a murderer and do not exact compensation. Between clans homicide may lead to vengeance and war; within the clan it does not. In the latter case it is like a cow that has trampled on its calf and killed it, the natives say. In either case the matter is left to the arbitrament of Earth. Tallensi who have shed human blood take no pride in it. A man who can be persuaded to confide the story of how he killed another speaks of his deed as if it were forced on him by circumstances. Though homicide seems to have been an infrequent occurrence in the past, it was by no means rare; but every instance I have heard of was presented as a reprehensible action, even if it was due to provocation or done in self-help. Informants always draw the moral prescribed by Tale ethical values. So-and-so killed a man and died childless; So-and-so left only one young son; deaths pile up in such-and-such a family because their father had shot a man. In the long run, again, the reaction to sacrilege is greater respect for the moral norm and its ritual sanction.

578 632 Bloodshed and strife are symptoms and causes of deep rifts in or between human communities. The taboos against them show us the Earth as a sanction of solidarity within and between communities; and this is of particular interest in relation to the structure of the settlement. The bond between community and locality has moral implications for the natives that transcend the crude facts of spatial distribution and economic organization in which they are rooted. It is worth while tracing out these implications somewhat further from the starting-point of the individual farmer again.

The Social Framework of Production: Land Tenure

241 471 [46] 431 The farming unit among the Tallensi is the group of male agnates of a single household who usually form a nuclear lineage. Most of the plots it farms are owned by the farming unit, but some may be borrowed for a shorter or longer period and some held by gift. In the case of borrowed or gift land the farmer—distinguished as the 'owner of the farm' (*kuoraana*)—pays no rent to the owner—distinguished as 'the owner of the soil' (*tamraana*)—or tribute to a political authority. An annual gift of grain, when crops are good, is the only return he makes to the owner of the land, and this is a voluntary gesture of gratitude, not a jural obligation. Borrowed land always reverts to the owner. Theoretically gift land can also be resumed at will by the owner. In practice it often becomes the property of the recipient's lineage in the third or fourth generation after the gift, if it has been farmed continuously by that lineage. This is either because donor and recipient are usually kin, related in such a way that

2: Fortes E-5 (1934-1937) 1945
FE11 Tallensi FE11

241 471 431 the latter can claim a contingent right to the land and cannot be dispossessed without offence to their common ancestor or ancestress; or because the land was virgin at the time of the gift and the donor 'cut' (*kie*) it for the recipient in virtue of being the tendaana of the area. Thus all farm-land is either owned or in process of becoming owned.

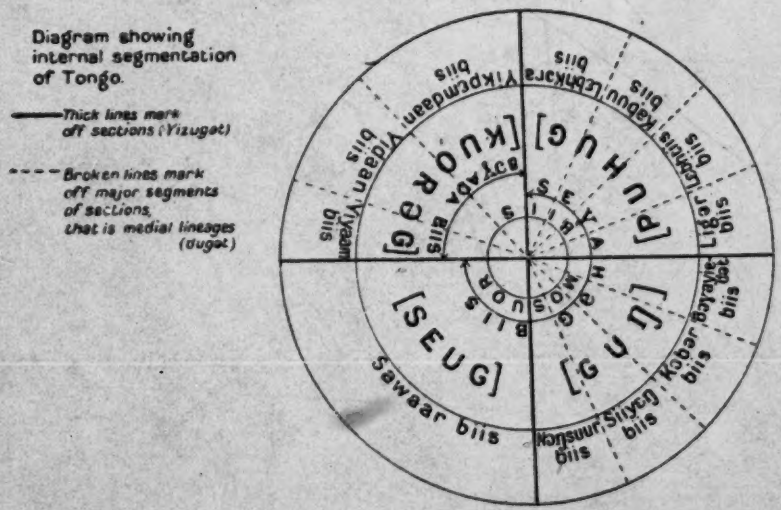
471 613 The ownership (*solom*) of farm-land is a precise jural concept among the Tallensi. Briefly, it is vested in a lineage and forms the most important part of the lineage patrimony (*faar*). When, in course of time, this lineage splits up, some of the *faar* land will be apportioned among the resulting segments, each of which will retain perpetual and exclusive ownership of its portion. The rest of the *faar* land remains the common property of the whole lineage. Though the bulk of farm-land is owned by nuclear lineages, there is land owned by lineages of larger span than the average nuclear lineage.

471 428 613 577 To say that land is owned by a lineage is equivalent to saying that it is generally acquired by right of inheritance. All males of the lineage have the right to inherit lineage land, but at any given time control over it is vested in the head of the lineage, by right of seniority. He inherits (*vaa*) what amounts to full usufructuary rights within the limits of the co-existing rights of the other members of the lineage. The utilization of the land is at his discretion; he disposes of the crops; and in some settlements he is nominally free to pledge or to sell the land. But he is subject to restraints which observation shows to be very effective. He is bound to provide fairly for the wants of those who share the labour of farming with him. Tallensi formulate this obligation in terms of reciprocity within the productive unit, which they regard as a matter of natural justice and moral duty. They emphasize, however, that there is also a [686] strong practical sanction behind the rule. A man who deals meanly or unscrupulously with his younger brothers, sons, or brother's sons will find that they leave him at the first opportunity; and the strength of this sanction has increased now that young men, and even girls, can easily slip away to work abroad. In accordance with this obligation a lineage head always consults his dependants about the disposal of land, crops, or other patrimonial property.

688 471 432 There is also a religious sanction, the converse of the obligation to one's dependants, and the ritual projection of the common interest of the lineage in its patrimonial land. Inherited farm-land is a sacred trust of the ancestors. Their labour won it for human use, hallowed it, and preserved it for their descendants. It belongs to them. To pledge it is a slur on them; to sell it a sacrilege. 'It will kill deaths (*de kura kum*)'—the offended ancestors will cause deaths in the family of the seller—the natives say. And the strength of this sanction is such that only dire necessity will make a man sell ancestral land in the settlements where this is allowed. It is, in fact, an uncommon thing for farm-land to be sold, both for technological reasons, and on account of the ritual sanction against sale. In places like Tongo, land sales do occur, however, but appear to have been more frequent in the past than at present. Three out of every four nuclear lineages at Tongo possess farm plots that they claim have been purchased during the past two or three generations.

621 613 218 THE LINEAGE IN THE LOCAL COMMUNITY

sex, station in life, character, and reputation of the deceased all influence the reactions of people to a death and the range of participation in the funeral ceremonies. Every death is the corporate concern of the deceased's medial lineage—his *dug* of the *yizug*. It is less stringently the corporate concern of the whole *yizug*. Funerals of old and important men evoke the participation of the whole clan or sub-clan, but it is clan solidarity and corporate obligation on the level of the section that draw *sunzo* sections to the ceremonies. Only the death of a chief, a tendaana, or other politico-ritual functionary, is the obligatory concern of every segment of the clan or maximal lineage. Funerals of women and young people or children impose no obligations on *sunzo* sections of the



deceased's (or her husband's) section. Whether or not their representatives come to condole with the bereaved household or to take part in the burial and funeral ceremonies rests entirely with the individual members of these sections and depends on individual ties of neighbourhood, kinship, or friendship with the deceased's family and *dug*. A funeral, even that of a politico-ritual officer, is primarily the direct concern of every member of the deceased's segment of the clan or maximal lineage. It concerns *sunzo* segments only at the level of corporate relations, because every event that affects the existence and constitution of one part of the clan or maximal lineage impinges on its common interests.

622 621 613 We may contrast with this a corporate activity in a wider sense, such as the sacrifice to Mosuor at Tongo, to which we have several times referred, the Harvest Festival, or the communal hoeing of the chief's bush farm, which has become an established custom under British rule. [24] The pivot of these activities is always the chief, who stands for the whole sub-clan and its common interests and values, and whose office transcends the cleavages inherent in its lineage segmentation. In these activities the

2: Fortes E-5 (1934-1937) 1945
FE11 Tallensi FE11

PLATE XI

764
778
241
137

(*a*) The grave of Tendaan Genat and the space believed to have been occupied by his homestead and Mosuor's, now the sacred dancing ground, Giŋgaaŋ Puhug, at Tongo. Note that it is not cultivated.

778
341

(*b*) A miniature homestead symbolizing the ancestral home of a maximal lineage or clan. Note the lineage *boyar* against the outside wall.

[FACING p. 224]

2: Fortes E-5 (1934-1937) 1945
FE11 Tallensi FE11

of an enemy in order to hit him. Fighting went on all day in spasms. At nightfall the men retired to their settlements to feast, dance, sing boastful songs, lament the dead, and rest. This was kept up for two or three days at most and then peace was made.[1]

Tale warfare inevitably took this form, since no single segment of the society and neither of the two major groups of clans had political power superior to any other segment or the other group. There is no institutional framework that could be extended so as to make any one segment paramount over the others as a result of a successful war. Every segment holds its allotted place in the whole system in virtue of complementary politico-ritual ties with the other segments, in particular with segments that would be opposed to it in war. They have common values and are subject to common ritual sanctions. Besides, their marriage rules and kinship system spread a wide network of affinal and cognatic relations between clans and lineages. Every Talən has cognatic or affinal kin in every clan within a radius of four or five miles of his own. Though corporate loyalties to his lineage and clan override his private loyalties to his kinsfolk of other clans, whenever the corporate interests of his unit are at stake they do not extinguish them. Hence a man had to be very careful, in a fight, to avoid killing or injuring any of his own kinsmen who might be on the other side. Hence, also, the prohibition of pillage for one's own advantage. If the enemy was routed, the victors might descend on their settlement, set fire to the homesteads, burn the stored grain, slaughter and eat the live-stock; they could not carry off any of the enemy's possessions. A Namoo clan might fight a Talis clan; but it would be a grave sin against kinship morality for an individual Namoo to plunder or to take captive individual Talis, since they would most likely be the cognates or affines of members of his own clan and therefore indirectly of himself. The idea of killing the women folk or children of the enemy clan—who might easily be one's clan sisters or nephews—would have seemed monstrous.

Last, but not least, Tale economic organization is incompatible with warfare for material gain. There was and is no such thing as a tribe-wide or clan economy. Occupational differentiation, other than the division of labour between the sexes and in accordance with age, has barely emerged. Local trade is becoming increasingly important, but there was in the past no commerce other than barter and occasional petty trade. The Tallensi were and are still sedentary cultivators, using a primitive

[1] Tallensi often say that many men were killed and wounded in these fights. As they never counted their casualties it is impossible to get accurate figures from them. But taking account of the weapons used, the manner of fighting, and the duration of the fights, it is difficult to believe that casualties were in fact very heavy. As far as I can estimate, no more than three to four thousand men, fighting in scattered contingents of about 20 to 50 men, would be engaged in a general war. A settlement like Tongo, the largest in Taleland, would turn out between 200 and 300 fighting men at the outside. Putting together all that I was told, I would say that three or four men killed and a dozen wounded would have been regarded as a very heavy casualty list for Tongo in a day's fighting. It must be remembered, though, that the mortality from wounds was probably high, as the main non-magical treatment used was to suck the poison and pus out of the wound.

3: Fortes E-5 (1934-1937) 1949
FE11 Tallensi FE11

PLATE 2

593
241
361

a. The domestic family is the matrix of kinship. A family party out lifting ground-nuts on the home farm. Their homestead is in the background. From right to left: the head of the family, his infant daughter, his adult son, the latter's wife and baby, the family head's wife and daughter

782

b. A domestic sacrifice: cleaning and apportioning the meat of the goat at the conclusion of the sacrifice. Banan-Teroog, his senior wife, and his junior wife's two children. The old woman is holding a chicken ready for the next sacrifice

[FACING P. 33]

3: Fortes E-5 (1934-1937) 1949
FE11 Tallensi FE11

595 578 According to the natives, quarrels between co-wives are often due to one or other of them having an intractable disposition. Men add that women lack self-control and are very prone to petty jealousy; they are apt to quarrel if they think they are being unfairly treated, if, for instance, one wife seems to receive more than a fair share of her husband's attention. But when actual cases of such quarrels are examined they are seen to be an expression of the tensions springing from the cleavages in the structure of the domestic family. They are temporary disturbances of the balance between the relatively autonomous matri-central *dug* and the inclusive patri-central *yir*. That is why they occur so rarely between women who are related by kinship or clanship, and who therefore think of their *dugət* as subdivisions of a single wider *dug*. Co-wives live in harmony as long as they act in the interests of the common *yir*; dissensions arise between them when they do not accept the paramountcy of the *yir*, and assert their relative autonomy in relation to one another. In the normal run of family life the interests of the common *yir* come first, for the sustenance of the family and the general welfare of all its members depend upon proper co-operation between them, resting on mutual loyalty and goodwill.

595 462 ●241 The women of the household, both those who are co-wives to one another, and those who are mother-in-law and daughter-in-law, or mother and daughter to one another, usually work together harmoniously to perform their share of the productive labour of agriculture. They work under the direction of the head of the house, and the products of their labour accrue to the common food supply. This is a part of the co-operative economic organization of the household. Thus at sowing or harvest time one often sees a whole family working together in the fields. When a sowing party is at work one sees the men striding vigorously ahead, dibbling the holes with their long heavy dibbles cut from saplings, while the women follow behind, chattering and laughing amicably as they sow the grain. And when the harvest is in full swing, one sees similar cheerful family parties out on the field or homeward bound at dusk in Indian file, the men in front, perhaps carrying their pear-shaped wicker coops in which they have collected a brood of chickens that had been allowed to run in the fields during the day, the women sauntering close behind them, the heavy baskets of grain on their heads, and small boys and girls gambolling in the rear blowing their whistles and shaking their rattles (*kiykayah*) of serrated calabash disks. [534]

595 The independence of the *dug* comes out in the utilization of the food-supply. As the women have to supply the vegetables for cooking the relish which the natives regard as an indispensable accompaniment to their heavy porridge, each woman who has her own *dug* is entitled to a vegetable patch beside the wall of the homestead. Except for the senior woman of the house, who has a slightly larger vegetable patch

3: Fortes E-5 (1934-1937) 1949
FE11 Tallensi FE11

PLATE 12

603
302
341

a. A grandfather with his son's children

613
241
291

b. The effective minimal lineage: the father, his eldest son (working in the distance), his two small sons, and his two grandchildren out on the farm for the day

[facing p. 209]

4: Fortes and Fortes E-5 (1934-1936) 1936
FE11 Tallensi FE11

596 must now consider how these raw materials are consumed by the unit of food economy. It will be impossible in the scope of this paper to discuss every social situation affecting the domestic economy of food, since there is hardly a social act in which something edible or masticable does not participate, be it only a piece of kola-nut or a plug of tobacco. We shall refer briefly, therefore, to the most conspicuous types of situations in which food plays a part, and discuss more fully the domestic consumption of food in the ordinary routine of family life. We emphasize again that our purpose is to give an ethnographic account of these facts, as we have been able to observe them in a single year. We have not the quantitative information to allow us to venture upon a deeper sociological analysis.

262 433 241 Tale food economy has a marked seasonal periodicity, as is to be expected in an agricultural society. It is this seasonal rhythm which links the supply of foodstuffs with their distribution and consumption. This correlation emerges readily from a calendrical tabulation in which the agricultural and other productive activities are set down side by side with the facts pertaining to the utilization of the food supply. Agriculture in Tale-land is a hazardous enterprise, chiefly because of the uncontrollable natural phenomena upon which a successful crop depends, above all, the correct distribution of rainfall. Good harvests and bad harvests succeed one another erratically and the natives can never predict from one year to the next. Their primitive methods of farming, too, mean that they extract only half as much out of the land as it is capable of producing. 'Nevertheless,' says Mr. Lynn,[1] 'in a good season . . . nobody is short of food. The area of land cultivated is adequate and the system of farming is successful.' But the margin of security for the average householder is extremely small, at any time. We have no means of estimating how representative the observations made by us in 1934 may be; the natives considered it to be a fair year. For our purpose, however, it chanced fortunately, since we were able to observe more easily the relations between supply and consumption of foodstuffs in the average household than might have been possible in either a very good or a very bad year.

[1] *Op. cit.* Mr. Lynn records that in both 1930 and 1931 the harvest was bad owing to locusts and adverse rains. In 1934 the neighbouring areas were worse off than Tale-land.

4: Fortes and Fortes E-5 (1934-1936) 1936
FE11 Tallensi FE11

PRODUCTIVE CYCLE	FOOD CYCLE
and weeding, planting guinea-corn and late millet on bush farms, rice, ground-nuts and minor crops. Hiring labour for help in hoeing and weeding.[2] Women plucking *naŋgena*.	Much live stock sold or bartered for grain very cheaply; grain scarce and dear. Much ground-nuts for sale.[1] Small groups of children wander about hungry, feeding on wild fruits and small animals they find near the settlements. Towards the end of the month many people are staunching their hunger by cutting the ripe or half ripe heads of early millet which they roast on the embers and nibble at.
JULY: Early millet harvested by those who planted first on valley land.[3]	Early millet eaten by those who harvest. Relatives from the later-

[1] People tend to hoard their ground-nuts until about June, when the price rises to 1*s*. a small basketful, as many require seed then. The proceeds are invested in grain. Grain prices at this time are about twice the average price of roughly ½*d*. a lb.

[2] In June even those whose grain supplies have lasted well begin to feel the pinch. One reason for this is that a considerable amount of grain is expended in feeding and recompensing hired *kpaarip* (lit. hoe-men). These are Nankansi and Builsa who come to Tale-land to seek a few days' work, since their settlements are in a worse plight than those of the Tale. They insist on being paid in grain or ground-nuts which they can take home. As they have to be given flour-water (*zɔmkuom*) in the middle of the day and a good meal at night besides a calabash of 4 or 5 lb. of grain per day to carry home, they make considerable inroads on grain supplies. At this time of the year only those with grain to spare engage *kpaarip*, later even poorer men do so. It may mean economizing on one's own food at the time, but in this way, say the Tale farmers, one can get a large bush farm hoed or weeded expeditiously, and thus make up the grain expended twice over.

[3] Early millet is a catch-crop and the Tallensi realize this. Its function is to tide over the period of waiting until the main crops of guinea-corn and late millet are harvested. Hence the necessity for a piece of compound farm if a unit is to be fully independent.

The Tallensi say that early millet normally lasts for two months, and our observations prove this to be the case. When the millet is brought in by the women, the heads are spread out to dry and sorted into two lots, the good heads (*naarsɔmr*) and the bad heads (*naarbiet*). The best of the former are selected for seed, threshed and stored in pots. This is the first task, as it is considered shameful to be without seed at planting time. The bad heads are eaten first, the good millet stored in the granary and eaten later. For a few days there is no restraint. Small children run about all day, nibbling at heads of millet which have been quickly roasted in hot embers. But as soon as the head of the unit of food economy has carried out the thanksgiving sacrifices which permit him, too, to eat of the new crop, he takes control.

4: Fortes and Fortes E-5 (1934-1936) 1936
FE11 Tallensi FE11

PRODUCTIVE CYCLE	FOOD CYCLE
Hoeing and weeding of compound and bush farms in full swing. Some still planting subsidiary crops. Poultry breeding begins.	planting areas come to beg grain.[1] Wild fruits still eaten and hunger prevalent in late-planting areas. Ground-nuts, beginning to ripen, plucked and chewed as snacks.
AUGUST: Late planters harvest early millet. Invited collective labour (*kpaarip*) for hoeing and weeding coming to fore, but hired labour still in evidence.[2] Fresh hibiscus leaves used in soup.	Almost everybody has early millet; hunger appeased for a time.

[1] The different settlements harvest at such different times corresponding to their times of planting that more than a month elapses between the beginning of the harvest at one end of Tale-land, and its conclusion at the other end. This gives rise to a system of reciprocities the effect of which is to cancel out the lag to some extent. People from the late-planting settlements visit their relatives in the early-planting settlements as soon as these begin to harvest and receive gifts of early millet from them. Women, especially, go thus to visit their parental homes, and no man would send his daughter or sister away empty-handed. Later, when the early-harvesting settlements begin to reach the end of their early millet stores, the process is reversed. The Tallensi never think of this in terms of economic interchange or reciprocal payments. They insist that *A* gives to *B* freely and without expectation of return because *B* is *A*'s daughter. Later, when *B*'s husband harvests his millet he will send some to *A* freely—because *A* is his father-in-law. It is significant that these mutual 'good turns' always occur between people of different settlements, not between patrilineal kin of the same settlement.

[2] Soon after early millet has been brought in, the elders and others who have had a good crop begin to 'invite hoemen' (*pooh kpaarip*). An elder sends round to all the compounds of his section (a sub-division of a clan settlement) requesting the young men to come out and weed his farms, compound or bush, for him on the following day. As no one would be so ill-mannered or so negligent of a kinsman's duties as to refuse, some 20 or 30 young men turn out next day. The one who issued the invitation recompenses them with two meals, flour-water (*zɔmkwom*) at noon and a lavish cooked meal at night. Thus commences a round of collective weeding, as every farmer who can afford the 20 or 30 lb. of grain and the meat for feeding them in turn invites his kinsmen and neighbours to come and weed for him. Others have to hire foreign labour to the best of their capacity. The Tallensi account for this institution firstly on the ground that it is only by such a mass attack that the rapidly growing weeds can be kept under, and secondly on the ground that it relieves the strain of unremitting toil in the fields and increases the crops.

Gifts to relatives and feeding collective labour are a considerable strain on a man's granary at this time, though, in the long run, much of it comes back. Reliable informants told us that half of their total crop was expended thus, leaving them short of millet in September.

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

137 either as food or medicine, have been allowed to remain. The most important of these are :—

Adansonia digitata	Acacia albida
Butyrospermum parkii	Acacia sieberriana
Parkia filicoidea	Acacia arabica
Diospyros mespiliformis	Cieba pentandra
Sterculia tomentosa	Bombax buonopozense
Ficus gnaphalocarpa	Lannea acida
Tamarindus indica	Sclerocarya birrea
Celtis integrifolia	Vitex cienkowskii

Other trees of less economic value, which have been removed to make way for farming, or to provide firewood and building timbers, can be seen well represented in "ju-ju groves", "tengani" (Nankani), and on the margins of cultivation. The most important of these are :

Combretum spp.	Acacia seyal
Terminalia spp.	Acacia senegal
Anogeissus leiocarpus	Sarcocephalus russegeri
Bauhinia spp.	

Grasses.

All land which is not under cultivation carries a covering of grasses which is usually burnt-over annually, in the dry season. The composition of grass land varies according to soil, situation, and conditions of burning and grazing. Large areas of exposed land carry only a thin cover of Heteropogon contortus. On better soils Pennisetum polystachyon, "chima" (Nankani), is found on roadsides and between farms; it is valued highly as a fodder grass. Other grasses commonly occurring on waste places in cultivated areas are: Dactyloctenium aegyptium, Chloris spp., Aristida ascensionis, and Eragrostis spp. In "bush areas" Adropogon gayanus and Cymbopogon proximus are common.

Topography.

133 North and South Mamprusi are separated by a steep escarp-
●241 ment. This is an important dividing line for it marks the change from the standstone and shale rock formations in the South, to granite, quartz, and greenstone formations in the North; it is also roughly the Northern limit of yam cultivation, associated with methods of "shifting" cultivation; and the Southern limit of early

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

millet and "fixed" cultivation. The Red and White Volta Rivers rise in French Territory and flow south through North Mamprusi until they reach the foot of the scarp; here they join, and flow westward. With their tributaries the Voltas drain the whole district; they are fed mainly by surface water and from being practically dry in the dry season, they become deep, swift-moving rivers in the rains, flooding their banks and doing considerable damage to road communications. 133 241

The surface of the country is gently undulating and outcrops of granitic rocks are common. Small stony hills occur sporadically and a definite range, the Tong Hills, runs north-east through the district from Shia in Zuarungu Area, almost to Bawku in Kusasi Area. The average height of the district is between 600′ and 700′ above sea level.

Soil.

The soils of North Mamprusi are mainly derived from granodiorite. They are greyish-brown in colour and contain a high proportion of sand and gravel which makes them course in texture. Ridges of quartz occur in some places and in their vicinity the soil is very stony. In valley lands the soil is heavier, due to an accumulation of finer particles washed down from the surrounding slopes; this soil becomes very wet in the rainy season and is seldom cultivated, although it is capable of growing excellent crops of rice. Odd patches of laterite stone are found but they are not common. Parts of the Tong Hills are composed of greenstone, a rock which weathers to a rich red colour and gives rise to a fertile but exceedingly stony soil. In cultivating, the people shift the stones into contoured heaps against which the soil packs forming terraces; examples of these can be seen around Dutsi, Zanlerigu, and Nangodi. In the middle of the rainy season—July, August, and September—the water-table rises rapidly and large portions of the district become water-logged. 134

Soil Erosion.

Close arable farming with no enclosure of fields, together with the undulating surface of the country, the open nature of the soil, and the practice of burning almost every particle of vegetal ground cover during the dry season, result in very serious sheet erosion of the soil, particularly at the beginning of the rains; streams and rivers are darkly coloured by the matter carried away in suspension. The resulting loss of fertility is considerable and the stony nature of the soil is accentuated, making cultivation more

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

difficult. In areas where the flow of storm water is particularly swift, the top soil has been completely scoured away, leaving bare expanses of sub-soil. Where this has occurred close to roads, the rapid run-off results in considerable damage. After a very heavy rain sections of the road may be washed completely away. (An example of this occurred in August, 1936, on the road between Bolgatanga and Zuarungu.)

Primitive Nature of the People.

The people of North Mamprusi are divided into a number of tribes; they differ in their customs and speak different dialects of Mole, but their methods of living and farming are the same. They are all primitive pagans, with simple requirements. Little or no dress is worn other than a goatskin by men, and leaves or string by the women. There is no indigenous cotton industry, and cotton goods, which are increasingly worn to-day, especially around market centres, are all imported or manufactured by strangers, generally Moshis, in the Zongos.

Absence of Villages.

An important feature of the district is that the people live in scattered compounds, unlike the Dagombas and South Mamprusis who live in villages and hamlets. The distance between compounds varies considerably; at one time it was probably about the length of a good arrow shot, but closer building around centres of importance, as near markets and lorry termini, is resulting in the formation of towns. This can be seen at places like Bolgatanga, and near Government stations. Each compound resembles a miniature fort and in the past there is little doubt that it served as such: it is roughly elliptical in shape and consists of a number of round mud houses opening inwards; and the whole is enclosed by a high mud wall. Roofs are made either flat, of beaten mud, or conical, and thatched. A single narrow doorway, which can be heavily barricaded, gives entrance to the compound: the space inside is divided into compartments by low walls. Livestock are kept in an open compartment near the entrance. The land lying between compounds is farmed intensively and manuring forms a definite part of the farming system.

Fixed Cultivation.

The high density of population necessitates a system of "fixed" cultivation. It is difficult to say whether the need for "fixed" cultivation resulted in the people living on their land in

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

scattered compounds, or whether closer building between compounds, on land previously available for farming, enforced the system because of the increasing distance to bush land. The result is the same, however, from our point of view. Farmers living on the edge of the densely populated areas frequently have bush farms, which are farmed by shifting methods of cultivation, as well as compound farms which are farmed continuously.

Land Tenure.

The customs associated with the acquisition and retention of land are intimately bound up with the religion of the people. Land is recognized as having a "spirit" which requires placating to deliver of its goodness. This is done through the "tindana" (Nankani), who is the intermediary between the "spirit of the land" and the people. It is frequently heard that "Chiefs command people, not land", and a Chief approaches the land through the "tindana". Every area has a tindana; if an area develops to an unmanageable size, a new "tindana" may be appointed by the tindana who exercised authority there before it developed. The area administered by a Chief, however, is fixed; so that Chiefs' and tindanas' boundaries do not necessarily coincide.

To acquire a new area of land, *i.e.*, land not known to be claimed by anyone, a prospective occupant will generally first approach the Chief of the district and state his requirements. If the Chief is satisfied as to the probity of the applicant he will refer him to the tindana, who has the final say in the matter. An application is seldom, if ever, refused. A suitable offering is made through the tindana to propitiate the spirit of the land, and the tindana may indicate a site for the new compound, and make suggestions with regard to the crops to be planted. The question of rent does not arise since there are no "money crops" and agricultural land has no value in the economic sense; there are a number of seasonal dues, however, given voluntarily to the spirit of the land, through the tindana.

In demarcating areas, such natural objects as stone outcrops, water-courses, and trees, are observed. This explains the reason for the irregular outline of most farms. Once land has been conveyed through the tindana, it is held in perpetuity by the family receiving it. Presumably, when a compound is first built in a bush area, sufficient land exists immediately around it to satisfy the requirements of the family. When the family grows up and the elder sons marry, they may choose to build compounds of their own. A new compound is made as close to the parent compound as possible, either upon a new land acquired from the tindana, or upon land

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

conquered many of the small tribes in North Mamprusi and superimposed their rule upon the indigenous clan system. Thus many of the Chiefs in the district to-day are of Mamprusi descent and pay tribute to the Nayiri, the paramount Mamprusi Chief at Nalerigu, near Gambaga. There is little tribal cohesion amongst the family sections, or clans, and it is upon their federation into a political unit, the Mamprusi State, that political officers have been engaged recently, following Government's policy of Indirect Rule through native Administration. The clans in Zuarungu and Kusasi now come into the Mamprusi Native Administration; those of Navrongo have formed Administrations of their own. Direct taxation was introduced in 1936 and marked an important step forward. A large proportion of the money collected is to be spent upon social services in the areas of collection, and agriculture is not being neglected.

631

[651]

Recent Slave Raids.

In addition to conquest from the South, the district was continually invaded by mounted slave-raiders from the North. There is no doubt that the unsettled conditions produced by these raids have had a profound effect upon the economic and social life of the people. The importance of this from our point of view is that now, with settled conditions, the people may be expected to adjust themselves, in time, to the new order of things, and to be prepared to modify their system of farming where necessary. It is probable that these invasions, together with tse-tse fly in heavy bush, tended to concentrate the population around the rocky hills characteristic of the district, where the horsemen would be at a disadvantage. The attention of the people appears to have been concentrated more upon weapons—bows and arrows, or spears, still used to-day for ceremony and hunting—than upon agricultural implements. It is also a significant fact that the indigenous system of agriculture requires no operation to be performed on the farm during the dry season, which is the season of the year when invasion would take place. The burning of the grass in the dry season may have been done to reduce the chance of surprise attack.

721

241

Agriculture a Custom, not a Business.

As might be expected from tribes consisting of small units having continually to defend themselves and losing many of their strongest men in fighting or taken as slaves, the people in North Mamprusi remained, economically, very primitive. Although the system of agriculture is "fixed", which is generally regarded as an advance upon "shifting cultivation", it leaves much to be desired. Farming methods have not been adjusted sufficiently quickly to

241

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

241 keep pace with the growth in intensity of conditions. Farming is regarded as a custom and not as a business, with the result that in crop production and in animal husbandry the maximum is left to Nature. It is custom based upon an unsettled past which underlies the economic system.

Diet.

262 264 The diet of the people is largely vegetarian; only after religious sacrifice, or upon a very special occasion, is the flesh of cattle, sheep, goats, donkeys or dogs, eaten, subject to certain taboos. Fowls are not eaten by women, or, in some sections, by first-born male children; they are therefore not generally found in a normal diet; guinea-fowls are eaten, however, by all who can afford them. The big meal of the day is consumed in the evening and consists of cereal flour, cowpeas, or Bambarra beans, prepared as a dough or porridge, over which soup made with or without meat, is poured. In the mornings a light meal is taken off anything left-over from the previous evening; similarly at mid-day. When working in the farms at the beginning of the season cereal flour is taken mixed with drinking water. The results of a study of the diet of the Tallensi—a tribe around Tongo in Zuarungu Area—in relation to domestic economy, has been dealt with very fully by Dr. M. and Mrs. S. L. Fortes (9).

Recurrent Food Shortage.

262 251 241 It is not surprising that with a precarious rainfall and almost complete dependence upon cereals, crop yields are very variable and recurrent food shortage is a common experience. Soil erosion, and a system of continuous cultivation with inadequate manuring, have reduced the bulk of farmed land to a basic minimum of fertility, except in the immediate vicinity of compounds. The food problem is further complicated by a natural improvidence of the people whereby all crops are consumed in the year they are produced. In good years a surplus of grain is used lavishly in performing religious customs; it is seldom stored against the possibility of a bad season. A rise in the market value of crops at planting time suggests that many people are so improvident as not even to save sufficient seed for planting.

Famine Foods.

222 261 A reduced supply of cultivated foods in a poor season is eked out by food from wild sources. There is scarcely a single tree in populated areas which has not some value in this respect; and the seed of an indigenous grass, "Gonongo" (Nankani) (Dactyloctenium aegyptium), is laboriously collected and used as grain.

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

Types of Farm.

Farms are of three types:—

241
311

1. Compound Farm. This is the original farm and the most important. It is dressed with any manure which may be available and invariably receives attention first. Size and shape is very variable; average size, 4.89 acres.

2. Farms separate from compound farm but not "bush". These are generally small areas between compound farms, very irregular in outline and farmed less intensely than the compound farm; average size 1.35 acres.

3. "Bush" Farms. These are extensively cultivated farms, away from compounds, often upon stony hillsides. They receive the minimum of attention. The average size of bush farms is 1.74 acres.

Analysis of Areas Cultivated.

Of the land cultivated by 54 recorded compounds, 61% of the total area cultivated was compound farm; 17% farm away from the compound but not in bush; and 22% was bush farm (see Appendix II, Table 4). Not every compound had each kind of farm, however:—

10 compounds (18%) had compound farms only, with an average of 7.47 acres.

22 compounds (41%) had compound farms with an average area of 4.51 acres and in addition farms away from the compound (but not "bush" farms) average area 2.07 acres.

14 compounds (26%) had compound farms of an average area of 4.36 acres and "bush" farms of 4.56 acres.

8 compounds (15%) had compound farms with an average area of 5.89 acres; farms away from the compound but not bush—2.35 acres—and bush farms—5.75 acres.

Bush farms were found at Nangodi, Tongo, Kologo, and Zebilla; none at Bongo, Chana, Sambruno, Navrongo and Wiaga. Two compounds at Zuarungu, on the Nangodi road, had bush farms in the hills. The treatment of different types of farms will be discussed below under the headings for crops and yields.

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

Man Power and Persons Supported.

241● 311

Two figures of primary importance to the study of agriculture in its particular relationship to food-supply and density of population are, (i), the area of land cultivated per man working; and (ii), the area of land cultivated to support a unit of population. These figures, when taken into consideration with the system of farming followed, and the agricultural potentialities of the district, form the basis and starting point for ameliorative measures. Statistics are given for every compound surveyed, in Appendix II, Tables 1—3. These are summarised in Appendix II, Table 4, from which the following data have been extracted.

1. The total area of land cultivated by 54 compounds was 431.08 acres. This gives an average area cultivated per compound of 7.98 acres.

2. The number of men farming 431.08 acres was 173; average area cultivated per man farming—*2.49 acres.*

   (Note. Boys big enough to hoe are included as "men farming". Women and children also assist, particularly with planting and harvesting.)

3. Total number of persons supported on 431.08 acres was 650 (this figure includes children, but not babes in arms); average area cultivated per person—*.66 acres.*

4. 173 men supported 650 persons; 1 man supported 3.7 persons.

5. An average compound farmed 7.98 acres, of which 61% may be compound farm, 17% away from the compound but not bush, and 22% bush farm. This area is farmed by 3.2 men and supports 12 persons.

It is interesting to observe that if these figures are taken as being representative of the whole of North Mamprusi, about one-eighth of the district is under cultivation.

Crop Husbandry.

Crops Grown and Methods of Cropping.

241

All crops grown in the district are annuals of which the cereals, early millet, late millet, and guinea corn, occupying over 90% of the cultivated land (see Table 2, below), are by far the most important. A list of the crops more commonly grown is given in

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

241 Appendix III with their Nankani, Kassena, and Builsa names. Mixed cropping is the general practice with all except root crops and tobacco. Proximity to the compound, and the nature and fertility of the soil, determine the crops to be planted on any given area. The cropping most commonly found upon the three types of farm is as follows :—

(i) *Compound Farm.*

The standard cropping upon fertile land—land sometimes manured—is early millet mixed with guinea corn, alternated with early millet and late millet. Further from the compound where land is seldom manured, guinea corn alternated with late millet is planted without early millet. This alternation of the late cereals is the only rotation followed. Under guinea corn and millet, whether planted in a mixture or alone, cowpeas and "neri" (Cucumis melo) are invariably planted as ground crops. Minor crops planted in small quantities in compound farms are: maize, intercropped upon old midden sites near the compound; Hibiscus cannabinus in small beds, a soup plant "Nangina", Nankani (Gynandropsis pentaphylla), and sometimes tobacco, near to the compound wall; groundnuts upon sandy soil away from the compound and Bambarra beans on gravel; rice in small patches, sweet potatoes and Fura-fura potatoes (Coleus dysentericus) in ridges or beds, in wet parts of the farm. Odd plants of pumpkin (Curcubita pepo), sesamum, and cassava, are sometimes intercropped around the compound; whilst over the compound itself, calabashes (Lagenaria vulgaris) are trained. Small beds of the earth bean, Kerstingiella geocarpa, and tiger nuts (Cyperus esculentus), are sometimes planted on the margin of the farm. Along the sides of all paths and farm boundaries Hibiscus sabdariffa is planted.

During the rains, as can perhaps be imagined from the above description, the compound farm presents an amazing scene of heterogeneous crop growth, in marked contrast to the bareness of the dry season. There is no part of the farm, other than that occupied by buildings, paths, and occasional grazing areas, which has not something planted upon it. The method of planting is very haphazard, and this, and the filling of blanks in a mixture with some other crop, greatly complicates the cropping plans. A compound farm may have as many as a dozen different mixtures of crops upon it, planted on areas from as small as .01 of an acre, upwards.

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

(ii) *Farms Separate from the Compound Farm, but not in "Bush".* 241

These farms are seldom manured and only rarely are they sufficiently fertile to grow a crop of early millet as well as another cereal; they are treated in the same way, therefore, as those parts of the compound farm which lie outside the sphere of manuring. If there is no land in the compound farm suitable for groundnuts, the farm may have been specially selected for this crop. The general treatment of these farms is the same as that described for the compound farm; but since no early millet is planted, there is no great hurry at the beginning of the season and the farm receives attention when work on the compound farm is well in hand.

Under this heading should be mentioned the dry season tobacco cultivation on the river flats between Bolgatanga and Winkogo and, to lesser extent, at Sambruno and elsewhere. This is a specialised cultivation of importance in these places. The land is fertile because it receives some of the goodness leached out from the surrounding country. In a season when rains fall early, a crop of early millet may be taken off before the land becomes water-logged. In August and September tobacco seed-beds are prepared; the seedlings are transplanted in October and November as the water-table recedes. The tobacco is harvested in January, February, and March. 249

(iii) *Bush Farms.*

Bush farms are found only in areas where unoccupied land is not more than a mile or two away from the compound. They are frequently made on hill-sides where the soil is shallow and weed growth is not very vigorous. Little is done beyond planting the seed and giving a single hoeing. Guinea corn and cowpeas alternated with late millet and cowpeas is the usual cropping until yields fall off; the farm is then left to recuperate for a few years. In a lucky season fair yields may be reaped, and any yield is considered a good return for the small amount of labour expended. It is necessary to mention that in the south of Kusasi Area, and in the south-east of Zuarungu Area, yams are grown in bush farms, and the system of farming followed is typical of South, and not North, Mamprusi. 241

An analysis of the distribution of crops at the ten centres of record is given in Appendix II, Table 5. From this table the following summary (Table 2) has been taken. It shows the crops, and mixtures of crops, and the proportion of the total area cultivated under each, expressed as a percentage for the total area cultivated by 54 recorded compounds. The area manured, as a percentage of the total area cultivated, is also shown.

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

●241

Table 2.—Summary of analysis of cropping and manuring on 431.08 acres farmed by 54 recorded compounds in North Mamprusi.

Crops or Mixture of Crops	% of total area cultivated (approx.)	% manured	Type of farm
Cereals—			
Early millet, Late millet, Ground crops*	16%	4.7%	Compound
Early millet, Guinea corn, Ground crops	16%	3.7%	Compound
Early millet, Late millet, Guinea corn, Ground crops	18%	3.8%	Compound
Late millet, Ground crops	16%	—	Bush and compound
Guinea corn, Ground crops	16%	.45%	Bush and compound
Late millet, Guinea corn, Ground crops	4%	—	Bush and compound
Rice	1%	—	Compound
Maize	.04%	.02%	Compound
Late millet**, Groundnuts	4%	—	Compound
Total Cereals	91%	12%	
Legumes—			
Groundnuts	5%	—	Compound
Bambarra beans ...	.2%	—	Compound
Groundnuts ..., Bambarra beans	3%	—	Compound
Kerstingiella geocarpa	.1%	—	Compound
Total legumes ...	8%	—	
Root crops—			
Coleus (Fura-fura) potatoes	.5%	—	Compound
Sweet potatoes ...	.1%	—	Compound
Total Root crops	.6%	—	
Miscellaneous—			
Tobacco, Okro, Hibiscus cannabinus	.1%	—	Compound

*Ground crops—Cowpeas and 'neri.'
**Could also be included under 'Legumes.'

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

Manuring.

241

It has already been mentioned that manuring forms a definite part of the farming system; there is scarcely a single compound which has not a compost heap of some kind in front of it, and everyone is familiar with the value, and the use, of manure. It is surprising, therefore, to find no great attention paid to either quality or quantity. Table 2, column 3, shows that 12% only of the total area cultivated received a dressing of manure in the year of survey. The manure (compost) consists of household sweepings, that is, the dung from livestock mixed with vegetable waste; but the amount of manure which is accumulated in this way is very small by comparison with the amount which could be made if a little more care was exercised in its preparation. Women and children carry the manure from the midden in baskets and put it on to the land in small heaps, just before, or just after, early millet is planted. From these heaps it is spread around at the next hoeing. The baskets hold from 4 to 15 lbs. and the heaps are made from 6' to 8' apart; this gives an average dressing of from 2 to 5 tons per acre. The yield figures (see Tables 3 and 4 below) leave no doubt as to the value of these small dressings of manure. Undesirable as it may be from a sanitation point of view, the vigorous growth of crops around compounds and near to markets, suggests that nightsoil plays no small part in the maintenance of soil fertility (a point which should be remembered when considering the provision of latrines: a septic tank used to compost vegetable waste is much to be preferred, where practicable, to pit latrines and incineration).

Implements.

412

The agricultural implements used by a people are generally a good index to the standard of their agriculture. This is certainly true of the implements used by the people in North Mamprusi; they are very rudimentary and the standard of cultivation is low. The hoe, with which most of the work is done, consists of simple oblong-shaped iron blade, 7" long and 5" wide, slightly concave on its inner face. The middle of the top of the blade is drawn up into a ring, this is forced on to the tapered end of a short hooked stick which serves as a handle; the whole weighs under 2 lbs. The blade is set on to the handle at an angle of about 85°, and the hoe is used by working it towards the body. The handle is about 1½'-2' long, made generally from "ginga" (Nankani) (Diospyros mespiliformis), or "gopelaga" (Acacia sieberriana). For chopping, or cultivation in particularly hard ground, an adze is used; this is made of heavier iron than the hoe, 1½"-3" wide and 4"-6" long,

412 mounted on a similar handle. Hoe-blades are now made from scrap iron, mainly parts of old motor cars and old railway sleepers; [177] a hoe is sold in the market for 2d. or 3d., which is well within the purchasing power of everyone. It is not many years, however, [326] since hoes were made from locally smelted iron; they were then not so easy to come by and some of the poorer farmers used hoes of hard wood.

241 The coarse nature of the soil enables a shallow cultivation to be given effectively with these light implements after a fall of rain. 134 When the ground is dry and hard, cultivation is very laborious and it is frequently neglected at a time when needed most. This is often the case early in the season when precarious rains make a soil-mulch desirable.

Preparation for Planting.

243 Two of the most important crops, early millet and guinea corn, are sown after the second big rain of the year, this is generally in the first week of April. The soil, which has been left untilled since the burn-over after the previous year's harvest, is very hard until humidity rises with the approaching rain, and there is very little time to do any preliminary cultivation. On the majority of farms the only preparation for sowing is to collect the remains of the previous season's crops into heaps and to burn, and sometimes to carry-out manure; very occasionally a little hoeing is done.

Planting Major Crops.

412 On the morning following the big planting rain the whole countryside turns out to do one of its few really full day's work 241 on the farm for the year. Men walk over the farm with stout sticks about 6' long, cut from "tcheea" (Nankani) (Anoegeissus leiocarpus), or "gopelaga" (Nankani) (Acacia sieberriana), sharpened at the end to a flat point, resembling a narrow-bladed oar; or sometimes fitted with a worn hoe blade. With these sticks, holes are prodded at random 2' 6" to 3' apart in the moist earth; 241 the soil being ejected with a twist of the wrists. Women and children follow the men with the seed of early millet and cowpeas mixed in a calabash. The calabash is held in the hand between the third and fourth fingers, and three to six seeds of early millet;

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

and occasionally one or two of cowpeas, are deftly ejected into each hole with the thumb and first fingers; both early millet and cowpeas are sown in the same hole. The seed is then lightly covered with soil and made firm by treading as planting proceeds. It generally takes two or three days to finish sowing early millet, and if the ground is still soft enough, guinea corn, mixed with "neri", is sown immediately, in exactly the same way as early millet and cowpeas, in the spaces between. When the sowing of guinea corn is finished in the compound farm, late millet is sown; it is also used for filling blanks in guinea corn. Attention is next given to the farms away from the compound. All cereals, except rice, are planted by the beginning of May, in a normal season.

Planting Minor Crops.

At the end of April or early in May women plant "bersi" (Nankani) (Hibiscus cannabinus), okra, and "nangina" (Gynandropsis pentaphylla), in beds close to the compound, and "bito" (Hibiscus sabdariffa) at intervals of 2′ beside paths and along farm boundaries. Towards the end of May, groundnuts are planted 6″ to 18″ apart in a manner similar to cereals, except that frequently the land is hoed first. Bambarra beans are planted next, either on the flat, or if the land is wet, on wide ridges. Coleus potatoes and sweet potatoes are planted on ridges in June. Rice is sown at the end of June, alone, or occasionally between guinea corn on wet land; when the water-table rises in late July, rice is thinned and transplanted as opportunity permits. This is also the time for thinning and transplanting late millet; a common practice is to transplant it into groundnut farms. Tobacco seed beds are prepared and sown in August, and the seedlings are transplanted in September and October for the dry season crop.

Crop Varieties.

A number of crop varieties are recognised and although many of the names distinguish only colour factors, other factors, such as earliness of maturity, particular uses, predilection for certain kinds of soil and manure, are known and utilised. With guinea corn, for instance, over a dozen varieties exist.

Cultivation.

Intercultivation starts as soon as crops have germinated, and any manure which was not carried before planting, is applied at this time. Cultivation consists of scraping the top three or four

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

241 inches of soil. Because of the haphazard method of planting, great care has to be exercised not to damage the young plants. The work is tedious; and the grain stores at this season of the year are [461] at their lowest (9); seldom is a man prepared to work for more than two or three hours at a time, and the maximum area cultivated in a day is about $\frac{1}{10}$th acre. Hoeing is started near to the compound and works outward; by the time the bush farm is reached the crops there are almost choked with weeds, and commonly they receive a set-back in their early stages from which they never [476] recover. A farmer fortunate enough to have a good supply of grain may call his neighbours to assist with hoeing, in exchange [573] for food and "dam" (Nankani), the local guinea corn beer. Or farmers may take turn about to work on each others' farms. In a few cases labour is hired and paid money wages.

243 On land where early millet is planted it is usual to give three hoeings; two before harvesting early millet, and a final one to earth-up the late cereal afterwards. Land planted with a single cereal, guinea corn or late millet, is generally hoed only twice; or, in the case of some bush farms on the hills, once only.

Harvesting, Methods and Times.

241 Early millet is the first crop to be harvested, at the end of June or beginning of July, having occupied the ground for about 243 80 days. When mature, this crop is from 5 to 7 feet high; at this stage the interplanted late cereal is 3 to 4 feet high, and ground-crops are beginning to make a cover. It is common to pluck a few heads "green" for immediate consumption, but the grain is allowed to harden before the main harvest. During this period birds become a serious pest; children spend the day scaring them and women carry rattles, made from pieces of broken pottery threaded on to a thin stick.

The heads of millet are cut off at the neck by men using short knives, and women carry the crop in baskets to the compound to [542] dry. The best heads are selected for seed; second grade heads are stored, unthreshed, in a granary (see diagram by Muir and Williams (4)) and threshed as required for use. Poor heads—"konkoni" (Nankani)—are boiled, threshed, and stored in pots; this grain is used for thickening soups. When all the early millet 252 heads have been gathered, women pull up the remains of the plants and transport them to a flat rock, where they burn them slowly to obtain the ash, which is carefully collected in pots. The ash

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

is used in preparing tobacco for chewing, and also, by percolation, "coom missom" (Nankani), literally "sour water", which is used in cooking cereal foods. The salts in the ash probably supply important minerals to the diet (11), but the process by which they are obtained, robs the soil of much of the manurial value in the residue of the early millet crop.

The leaves of cowpeas are picked by women throughout the growing season and used in making soup. Maize is harvested towards the end of July, followed by "neri". The fruits of neri are buried in the ground for about ten days to rot the pericarp; they are then dug up, washed by women in a stream, and the seeds are dried and stored in pots for future use. Early guinea corn is reaped at the end of August and in September, by which time late millet and the main guinea corn crop are coming into flower. At this season, women and children strip all the leaves and sepals from Hibiscus sabdariffa and, after careful drying, store them in pots for making soup during the dry season. The leaves of Hibiscus cannabinus are similarly treated, and the end of the branches, bearing fruits, are cut off and later the seeds are removed for soup making. The bast fibres of both Hibiscus sabdariffa and Hibiscus cannabinus are drawn after retting in streams for 10 to 12 days: they are made into rope of good quality; this work is generally performed by men. Women also draw the fibres of Hibiscus cannabinus, and scrub them white for making the "tails" they sometimes wear as alternative dress to leaves.

The main harvest season starts during the middle of September with groundnuts, and is carried on through October, and into early November, with guinea corn and late millet. During this period, from a peak in August, the rainfall decreases and the water-table falls; with the onset of the harmattan in November, the whole countryside dries rapidly. The groundnut plants are lifted with a hoe, and carried to the shade of a tree, where the nuts are picked off; the hay is carefully conserved as a dry season fodder. The day previous to reaping the late cereal, cowpeas are collected and carried to the compound; the leaves and stems are also conserved for fodder. The heads of late millet and guinea corn are cut off in the same way as those of early millet, and the stems are trampled to the ground. For about three weeks after harvesting, livestock are given open range in the farms and they feed readily upon the still succulent leaves of guinea corn and, to a less extent, millet. But as soon as the material is dry enough, fire is put through the farm to burn off the trash from the resistant cereal stalks, leaving them slightly charred, and clean: in this way much valuable dry season fodder is destroyed. The stalks are chopped from their

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

241
[372]

The stalks are chopped from their roots with an old hoe, collected into bundles, and stacked near the compound for use as fuel in the dry season, and for building purposes. Throughout the dry season the ground is hard and bare, except for the roots of cereals lying about; it remains in this condition until the farming cycle starts again with the approach of rain in the following year.

Yields of Crops.

The methods by which yield data were collected have already been described on page 16. The yields from nearly a thousand sample plots have been recorded at the ten centres in North Mamprusi during the years 1932, 1934, 1935, and 1936. These yields have been analysed according to district, year of record, and whether or not the plots were manured in that year, and the analysis is given in Tables 5 and 6 of Appendix II. The number of sample plots from which each mean was obtained is given in brackets, as an index of reliability. (Unfortunately it is not possible to give standard errors of the means since the first recorded individual plot yields have been mislaid and only the mean yields and the numbers of plots were placed on record.) It will be seen from this table that wide fluctuations in yield occur from year to year and from one district to another in the same year. 1932 and 1936 were generally recognised to be good years and it is interesting to note that in both these years the rainfall curves were very similar. They show: showers of rain in February; good planting rains in early April, with curves rising to peaks in May, and then falling slightly at the end of June for the ripening of early millet; after that a steady rise to second peaks at the end of September, instead of August, which do not fall quickly until the end of October. The year 1934 was considered to be rather below the average due to shortage of rain, both early and late in the season, and an excess at the time early millet was ripening. From Table 5 in Appendix II the mean yields for the more important mixtures of crops have been taken and these are given in Table 3 opposite to the nearest 5 lbs. per acre; this table should be considered in conjunction with Table 2 (text). Yields from plots which were manured in the year of record are classified as such; it was not possible to consider either the quality or the quantity of manure applied in relation to yield. The remarkable effect of quite small dressings of native compost (see page 23) upon yields is noteworthy.

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

Table 3.—Summary of the mean yields for the more important mixtures of crops in North Mamprusi. Records taken over a four year period 1932-1936. 241●

(From Appendix II, Table 6.)

Crops	Mean Yields per acre		
	Unmanured	Manured	
Early millet	320	455	lbs. grain
Late millet	405	420	lbs. grain
Cowpeas*	60	80	lbs. seed
Neri	40	30	lbs. seed
Early millet	295	555	lbs. grain
Guinea corn	370	525	lbs. grain
Cowpeas	60	80	lbs. seed
Neri	40	30	lbs. seed
Early millet	280	505	lbs. grain
Late millet	150	95	lbs. grain
Guinea corn	260	460	lbs. grain
Cowpeas	60	80	lbs. seed
Neri	40	30	lbs. seed
Late millet	240	—	lbs. grain
Cowpeas	60	—	lbs. seed
Neri	40	—	lbs. seed
Guinea corn	355	—	lbs. grain
Cowpeas	60	—	lbs. seed
Neri	40	—	lbs. seed
Late millet	120	—	lbs. grain
Guinea corn	110	—	lbs. grain
Cowpeas	60	—	lbs. seed
Neri	40	—	lbs. seed
Late millet	145	—	lbs. grain
Groundnuts...	690	—	lbs. dry in shell
Rice	690	—	lbs. paddy
Groundnuts...	635	—	lbs. dry in shell
Bambarra beans	490	—	lbs. dry in shell
Groundnuts...	565	—	lbs. dry in shell
Bambarra beans	150	—	lbs. dry in shell
Coleus potatoes	3,361	—	lbs. fresh tubers
Sweet potatoes	5,313	—	lbs. fresh tubers

*The weights of 'ground crops', cowpeas and 'neri', were calculated irrespective of mixture.

241

In order to demonstrate the annual variation in yields more clearly and the performance of individual crops, the yield of each of the more important crops has been calculated from Table 6, Appendix II, irrespective of the mixture in which it was grown; these yields are given in Appendix II, Table 7. Provided that the proportions of crops in the mixtures were fairly constant from year to year, the figures have a comparative value. From Appendix II, Table 7, the district means obtained in each year have been calculated to the nearest 5 lbs. per acre, and these are set out below in Table 4:—

Table 4.—Summary of mean yields of each of the more important crops, irrespective of mixture, for the years 1932, 1934, 1935 and 1936. Figures in lbs. per acre.

(From Appendix II, Table 7.)

Crop		1932	1934	1935	1936	Summary for all years
Early millet ...	Unmanured	355	230	365	300	270
	Manured	525	385	605	505	505
Late millet ...	Unmanured	350	195	175	255	235
	Manured	430	205	60	220	225
Guinea corn ...	Unmanured	395	230	320	495	325
	Manured	530	400	415	680	485
Groundnuts ...	Unmanured	490	680	725	685	595

The mean yields for 1936 given in the above table are lower than the means for Zuarungu and Navrongo since they include those from Zebilla in Kusasi Area. Zebilla suffered badly from a shortage of rain early in the season, which depressed the yield of the early crops; the guinea corn recovered well, however.

Methods of Storing Crops.

251
343

Cereals in bulk are generally stored unthreshed, in conical shaped granaries; the day's allowance is given to the women each morning by the head of the compound, and threshed as required. These granaries ("bari", Nankani) are made of "swish" proofed with cowdung and an infusion of the empty pods of Parkia filicoidea ("aam", Nankani); they are built inside the compound in Navrongo and Zuarungu Areas, and generally outside the door of the compound in Kusasi Area. In size they vary from 4′ to 6′ in diameter at the base, and from 6′ to 10′ high. A diagram of a section through a granary is given in Muir and Williams' paper (4).

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

Table 6.—Comparison of statistics from ten compounds in Zuarungu Area which suffered no food shortage in 1931-32, and nineteen compounds which suffered from a shortage.

	Means from 10 compounds with no food shortage.	Means from 19 compounds short of food.
Area of land farmed per compound	8.16 acres.	5.66 acres.
Men farming	3.4	3.4
Area farmed per man	2.4 acres.	1.68 acres.
Persons living in compound ...	14.7	11.5
Area cultivated per person ...	.55 acres.	.49 acres.
Persons supported per man farming	4.3	3.4
Units of livestock (March, 1932) ... (Fowl=1 unit.)	399	136

From Table 6 it will be seen that compounds which suffered from no shortage were bigger in almost every particular than compounds which suffered (c.f. district means, Appendix II, Table 4). Observation throughout the 1932 season showed that the farms of the ten successful compounds were better cultivated, and the owners had the reputation for being good farmers. A study of yields, however, showed no appreciable difference in favour of the successful farms; but as already mentioned, 1932 was a very good season for crops in Zuarungu Area, and none of our compounds suffered from a shortage of food during the following dry season. This suggests that under the present system of farming, the major factors determining yield are those lying outside the farmers' control; the most important of these are the amount and distribution of rainfall. The effects of better farming are more marked, therefore, in a bad season than in a good one. It is probably this fact, together with a knowledge of "wild" sources of food, which has resulted in a system of farming which demands the minimum amount of labour from the farmer, and leaves the maximum to Nature; for Nature, in the shape of a "fetish", can be placated by the simple expedient of sacrifice.

Causes of Food Shortage.

Indirect Causes.

Food shortage has been ascribed to a lack of land resulting from a concentration of population, and land settlement schemes have been suggested as the solution of the problem. But the concentration of the population is responsible only indirectly, and only for as long as the system of farming remains unchanged. It

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

262 178 is doubtful whether, given unlimited land, the local farmer would be prepared to devote any more time to cultivation. The inherent fertility of virgin land would be quickly dissipated if existing farming methods were followed upon it. Therefore, to provide more land without giving attention to the system of farming to be followed would merely postpone solution of the problem. The maximum distance to "bush" land from any point in North Mamprusi is about 8 miles, and it would not appear unreasonable to expect a man to move this distance voluntarily, if an adequate food supply were his greatest consideration and the acquisition of more land would ensure it. Changing economic and social conditions are bringing about the necessity for changed methods of farming. There is little doubt that development will stimulate expansion into unpopulated areas; then will be the time to foster migration, not before.

Direct Causes.

241 262 Density of population is therefore only indirectly a cause of recurrent food shortage; some of the more direct causes are:—

1. Farming practices which are not sufficiently intensive for conditons. A system of "fixed" cropping is followed and manuring is quite inadequate.

[461] 2. The innate distaste of the people for consistent labour, especially when there is a chance that it may not be essential. That is, a farmer would rather sacrifice to his ancestors for more rain—and perhaps spend the rest of the day at market (not marketing)—than to give his farm a surface cultivation to conserve the moisture already in the ground.

3. The lack of sufficient incentive, and a conservatism which makes a man prefer to cultivate a small area of impoverished land, cultivated by his ancestors, to going eight miles, or less, and having the labour of breaking up bush land (predial larceny is often offered as an excuse when bush farms are suggested).

4. Too great a reliance upon cereal crops. A bad season for cereals, or, as in recent years, depredations by locusts, means food shortage; that the season might have been a good one for root crops or legumes, does not affect the situation very much.

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

5. A "vicious circle" has been created. Years of living on the margin of subsistence, have sapped the energy of the people and predisposed them to disease; at the present time, many are physically incapable of the hard work which is necessary to bring about an improvement in their conditions.

241 146 164 262

Suggestions for the Improvement of Local Agriculture.

000

From our study of the causes of food shortage it is possible to suggest ameliorative measures. The two main forms which these measures must take are:—

1. By increasing the area of land in cultivation.

2. By improving the existing system of farming.

But as we have seen above (Indirect Causes of Food Shortage) the effectiveness of the first measure depends upon the second. It is therefore upon measures for improving the existing farming system with which we are concerned at present. Some of the more important of these are considered, in tabular form, below. It should be mentioned that the improvement in water supplies, which is shortly to receive attention (14), will play an important part in the general improvement of conditions, towards which the following suggestions are made:—

1. *Growth of a greater diversity of crops.*

   Too much reliance is placed upon cereals. The planting of more groundnuts and sweet potatoes; the introduction of pigeon peas, "sanzi" (an early maturing Dagomba bean), cassava, and, in some areas, yams and sesamum, would make useful additions to the present range of crops.

2. *The introduction of a rotation of crops.*

   This would require study over a period of years, but if, as seems desirable, the area of legumes and roots is to be increased, some form of rotation will be essential.

3. *Attention to the increase and maintenance of soil fertility.*

   Just as farmyard manure is the basis of arable farming in most other countries in the world, so might it usefully become the basis of arable farming here. "Mixed farming" provides the solution. The livestock of the country have a greater potential value as the producers of

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

APPENDIX II—TABLE 1.

ZUARUNGU AREA.

241
311
162

Details of areas farmed (in acres), men farming and persons supported for 29 compounds recorded at 5 centres in Zuarungu Area in 1932.

(Note.—The area of land occupied by buildings and waste land is not included.)

Compound No. and Name of Owner	Area farmed				No. men farming	Area per man	No. persons supported	Area per person
	Compound Farm	Separate "not bush"	Bush Farm	Total				
Bongo—								
I. Ayanbiri...	.53	2.00 1.65 .37 .14 .47	–	* 5.16	1	5.16	10	.51
II. Akani ...	2.89	.67 2.00 .42	– –	* 5.98	1	5.98	4	1.49
III. Inyaba ...	1.04	1.89	–	2.93	2	1.46	5	.58
IV. Aganda ...	6.71	.57	–	7.28	7	1.04	20	.36
V. Akawiboku	1.32	.54	–	1.86	3	**.62	8	.23
VI. Afuki ...	2.98	1.00 .50 1.45 2.03	–	7.96	4	1.99	13	.61
Totals ...	15.47	15.70	–	31.17	18	–	60	–
Means ...	2.58	2.61	–	5.19	3	1.73	10	.51
Nangodi—								
I. Doliba ...	1.62	1.57 .09	–	3.28	3	1.09	7	.47
II. Tobiga ...	13.25	.09	2.67	16.01	5	3.20	36	.44
III. Bugari ...	5.27	–	2.62	7.89	4	1.97	15	.51
IV. Banitami	3.54	–	2.36	5.90	2	2.95	7	.84
V. Babila ...	3.88	–	3.04	6.92	6	1.15	19	.36
Totals ...	27.56	1.75	10.69	40.00	20	–	84	–
Means ...	5.51	.35	2.14	8.00	4	2.00	16.8	.48

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

APPENDIX II—TABLE 1 (continued).

•24
311
162

Compound No. and Name of Owner	Area farmed				No. men farming	Area per man	No. persons supported	Area per person
	Compound Farm	Separate "not bush"	Bush Farm	Total				
Sambrano—								
I. Kasalaga	5.59	.99 .90 .26 .45	–	8.19	8	1.02	15	.61
II. Alori ...	2.78	.65 .20 .32 1.00 .51	–	5.46	5	1.09	13	.42
III. Asoro ...	5.50	1.07 .53 .68	–	7.78	3	2.59	11	.73
IV. Ayarina	8.57	.34	–	***8.91	2	4.45	7	1.27
V. Kolgo ...	4.01	1.34	–	5.35	2	2.67	6	.89
Totals ...	26.45	9.24	–	35.69	20	–	52	–
Means ...	5.29	1.85	–	7.14	4	1.78	10.4	.65
Tongo—								
I. Yembila ...	2.48	2.74	–	5.22	1	5.22	4	1.30
II. Zukori ...	3.82	.45 .59	5.96 4.83 5.65	21.30	7	3.04	36	.59
III. Omara ...	1.68	.61 .65	5.25	8.19	6	1.36	23	.35
IV. Dagbana...	6.43	.46 .51 .68	–	8.08	3	2.69	13	.62
V. Goloma ...	5.98	2.50	–	8.48	6	1.41	19	.44
Totals ...	20.39	9.19	21.69	51.27	23	–	95	–
Means ...	4.08	1.84	4.34	10.25	4.6	2.23	19	.54
Zuarungu—								
I. Adachama	9.25	3.89 .86	–	14.00	4	3.5	23	.60
II. Abagna ...	5.61	–	–	5.61	2	2.8	10	.56
III. Azogadugu	2.37	–	–	2.37	1	2.37	6	.39
IV. Awuni ...	3.22	–	–	3.22	2	1.61	10	.32
V. Atia ...	2.75	–	–	2.75	1	2.78	3	.92
VI. Asoro ...	7.56	–	–	7.56	4	1.98	8	.99
VII. Abugbiri	2.04	–	1.01	3.05	2	1.52	9	.34
VIII. Ayenpam	1.44	–	1.04	2.48	1	2.48	6	.41
Totals ...	34.24	4.75	2.05	41.04	17	–	75	–
Means ...	4.28	.59	.26	5.13	2.1	2.44	9.4	.55
SUMMARY OF DATA FOR 29 COMPOUNDS IN ZUARUNGU AREA								
Totals ...	124.11	40.63	34.45	199.17	98	–	366	–
Means ...	4.28	1.40	1.19	6.87	3.7	2.03	12.6	.54

*Receive assistance. **Two men very old. ***Poor, eroded land.

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

APPENDIX II—TABLE 2 (continued).

Compound No. and Name of Owner	Area farmed				No. men farming	Area per man	No. persons supported	Area per person
	Compound Farm	Separate "not bush"	Bush Farm	Total				
Wiaga—								
I. Abasu ...	3.12	.76 .46	–	4.34	3	1.45	10	.43
II. Akulbalmni	4.62	.89 .77 .57	–	6.85	2	3.43	8	.86
III. Anisedi ...	1.07	3.20	–	4.27	1	4.27	4	1.07
IV. Amanyadi	3.99	2.03	–	6.02	4	1.51	9	.67
V. Azurumi	2.86	1.01	–	3.87	2	1.94	12	.32
VI. Ansodi ...	1.87	.37	–	2.24	1	2.24	9	.25
Totals ...	17.53	10.06	–	27.59	13	–	52	–
Means ...	–	–	–	4.59	2.1	2.12	8.6	.53
SUMMARY OF DATA FOR 20 COMPOUNDS IN NAVRONGO AREA								
Totals ...	110.51	23.12	29.97	163.60	54	–	217	–
Means ...	5.52	1.16	1.49	8.19	2.7	3.03	10.8	.75

*Farmed very extensively. **One man a tailor.

APPENDIX II—TABLE 3.

KUSASI AREA.

Details of areas, men farming, and persons supported at Zebilla. Surveyed 1936.

Compound No. and Name of Owner	Areas farmed, in acres				No. men farming	Area per man	No. persons supported	Area per person
	Compound Farm	Separate "not bush"	Bush Farm	Total				
Zebilla—								
I. Mbila ...	1.58	–	6.37	7.95	1	8.18	4	2.04
II. Abila ...	4.62	–	9.62	14.24	6	2.4	22	.65
III. Agbanbila	4.26	–	4.30	8.56	4	2.16	9	.96
IV. Akobari ...	14.70	5.94	3.76	24.40	6	4.31	17	1.52
V. Aroko ...	4.22	3.23	5.71	13.16	4	3.30	15	.88
Totals ...	29.38	9.17	29.76	68.31	21	–	67	–
Means ...	5.88	1.83	5.95	13.66	4.2	3.25	13.4	1.02

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11
241
311
162

APPENDIX II—TABLE 4.

Summary of Tables 1—3 giving totals and means for 54 compounds surveyed at ten centres in North Mamprusi. (Allowance has been made in areas for land occupied by buildings or waste land. "Persons supported" includes adults and children, except babes in arms.)

District and Centre of Record	No. of Compound	Area farmed in acres				Total Number men farming	Area per man	Total Number persons supported	Area per person	Compound Means			Persons supported per man
		Compound Farm	Farm away not bush	Bush Farms	Total Area					Area farmed	Men farming	Persons supported	
Zuarungu Area—													
Bongo ...	6	15.47	15.70	—	31.17	18	1.73	60	.51	5.19	3	10	3.3
Nangodi ...	5	27.56	1.75	10.69	40.00	20	2.00	84	.48	8.00	4	16.8	4.2
Sambruno ...	5	26.45	9.24	—	35.69	20	1.78	52	.65	7.14	4	10.4	2.6
Tongo ...	5	20.39	9.19	21.69	51.27	23	2.23	95	.54	10.25	4.6	19	4.1
Zuarungu ...	8	34.24	4.75	2.05	41.04	17	2.44	75	.55	5.13	2.1	9.4	4.4
Navrongo Area—													
Chana ...	6	54.33	1.41	—	55.74	16	3.48	49	1.14	9.29	2.6	8.1	3.1
Kologo ...	6	29.75	5.09	29.97	64.81	16	4.05	83	.78	10.80	2.6	12.9	4.9
Navrongo ...	2	8.90	6.56	—	15.46	9	1.74	33	.47	7.73	4.5	16.5	3.6
Wiaga ...	6	17.53	10.06	—	27.59	13	2.12	52	.53	4.59	2.1	8.6	4.1
Kusasi Area—													
Zebilla ...	5	29.38	9.17	29.76	68.31	21	3.25	67	1.02	13.66	4.2	13.4	3.2
Totals ...	54	264.00	72.92	94.16	431.08	173	—	650	—	—	—	—	—
Means ...	—	4.89	1.35	1.74	7.98	3.2	2.49	12	.66	7.98	3.2	12	3.7
		61%	17%	22%									

Summary of Cropping at 10 Centres of Record in

241
311

District :	Zuarungu Area (1932)					
Centre of Record :	Bongo	Nangodi	Sambrungo	Tongo	Zuarungu	Tota 29 comp
No. of compounds recorded :	6	5	5	5	8	acres
Cereals—						
Early millet Late millet Groundcrops*	6.90 (1.71)	7.44 (1.28)	1.04 (.62)	11.91 (6.79)	18.99 (4.19)	46.28 (14.59)
Early millet Guinea corn Groundcrops	9.79 (2.47)	9.80 (1.46)	6.35 (.81)	4.44 (2.89)	5.90 (.72)	36.28 (8.35)
Early millet Late millet Guinea corn Groundcrops	2.98 (1.06)	–	13.15 (6.68)	–	5.32 (1.90)	21.45 (9.64)
Late millet Groundnuts	2.04	5.42	3.81	2.53	2.25	16.05
Late millet Groundcrops	–	.84	.63	19.03	3.23	23.73
Guinea corn Groundcrops	5.69 (1.10)	15.41	1.15 (.83)	11.98	1.22	35.45 (1.93)
Late millet Guinea corn Groundcrops	–	–	2.05	.98	.65	3.68
Rice	–	–	.58	–	.01	.59
Maize	–	–	–	.08 (.02)	.02	.10 (.02)
Legumes— Groundnuts	3.70	.75	3.35	–	2.17	9.97
Bambarra beans	–	.14	.14	–	–	.28
Groundnuts Bambarra beans	–	–	3.17	–	.74	3.91
Kirstingrella geocarpa	–	.09	.09	.11	–	.29
Root Crops— Colena potatoes	–	–	–	–	.32	.32
Sweet potatoes	–	–	.02	.21	.22	.45
Miscellaneous— Tobacco	–	.11	.02	–	–	.13
Okra	.07	–	–	–	–	.07
Hibiscus cannabinus	–	–	.14	–	–	.14
Total Cereals Percentage	27.40 (6.34) 88	38.91 (2.74) 97	28.76 (8.94) 80	50.95 (9.70) 99	37.59 (6.81) 91	183.61 (34.53) –
Total Legumes Percentage	3.70 12	.98 2	6.75 19	.11 –	2.91 7	14.45 –
Total Roots Percentage	– –	– –	.02 –	.21 –	.54 1	.77 –
Total Miscellaneous... Percentage	.07 –	.11 1	.16 –	– –	– –	.34 –
Total Area cultivated	31.17	40.00	35.69	51.27	41.04	199.17

*Ground crops — ceri and cowpeas.

[p. 70A-i]

APPENDIX II—TABLE 5.

tres of Record in North Mamprusi. (All areas are given in acres. Figur

●241
311

(1932)			Navrongo Area (1934 and 1935)					
Zuarungu	Total 20 compounds		Chana	Kologo	Navrongo	Wiaga	Total 20 compounds	
8	acres	%	6	6	2	6	acres	%
18.09 (4.19)	46.28 (14.59)	23	1.62	5.01	–	.31	6.94	4.2
5.90 (.72)	36.28 (8.35)	18	4.27 (3.29)	9.93	.73	4.40	19.33 (3.29)	11.8
5.32 (1.90)	21.45 (9.64)	10	16.83	12.17 (2.93)	7.08 (4.05)	19.20	55.28 (6.98)	33.8
2.25	16.05	8	1.93	1.31	–	–	3.24	1.9
3.23	23.73	11	5.27	16.63	3.26	.26	25.42	15.3
1.22	35.45 (1.93)	17	7.11	5.20	1.74	–	14.05	8.6
.65	3.68	1.8	6.82	7.04	.53	.31	14.70	9
.01	.59	.24	1.25	2.96	.26	–	4.47	2.7
.02	.10 (.02)	.05	–	–	.05	–	.05	.03
2.17	9.97	5	1.99	2.91	1.66	1.17	7.73	4.7
–	.28	.14	–	.56	–	–	.56	.3
.74	3.91	1.95	8.57	1.09	–	1.78	11.44	7
–	.29	.14	–	–	–	.16	.16	.09
.32	.32	.16	.05	–	.15	–	.20	.01
.22	.45	.22	–	–	–	–	–	–
–	.13	.06	–	–	–	–	–	–
–	.07	.03	.03	–	–	–	.03	–
–	.14	.07	–	–	–	–	–	–
37.59 (6.81) 91	163.61 (34.63) –	– 92	45.10 (3.29) 81	60.25 (2.93) 93	13.65 (4.05) 88	24.48 89	143.48 (10.27) –	– 87.5
2.91 7	14.45 –	– 7	10.56 10	4.56 7	1.66 11	3.11 11	19.89 –	12.1 –
.54 1	.77 –	– .40	.05 –	– –	.15 1	– –	.20 –	.12 –
– –	.34 –	– .1	.03 –	– –	– –	– –	.03 –	– –
41.04	199.17	–	55.74	64.61	15.46	27.59	163.60	–

[p. 70A-ii]

are given in acres. Figures in brackets denote area manured.)

241
311

934 and 1935)			Kusasi Area (1936)		Total, 54 compounds at 10 centres		Type of farm where commonly planted: Compound: Type (I) and Type (II) Bush: Type (III)
Wiaga	Total 20 compounds		Zebilla				
6	acres	%	6 acres	%	acres	%	
81	6.94	4.2	14.21 (5.97)	20 (9)	67.43 (20.56)	15.6 (4.7)	Compound
4.40	19.33 (3.29)	11.8	12.47 (4.36)	18.2 (6)	68.08 (16.00)	15.8 (3.7)	Compound
19.20	55.28 (6.98)	33.8	–	–	76.73 (16.62)	17.9 (3.8)	Compound
–	3.24	1.9	–	–	19.29	4.6	Compound
.26	25.42	15.3	18.28	26.7	67.43	15.6	Bush and compound
–	14.05	8.6	19.73	28.8	69.23 (1.93)	16 (.45)	Bush and compound
.31	14.70	9	–	–	18.38	4.2	Bush and compound
–	4.47	2.7	.06	–	5.12	1.2	Compound
–	.05	.03	.05 (.05)	– (.06)	.20 (.07)	.04	Compound
1.17	7.73	4.7	2.17	3.1	19.87	4.6	Compound
–	.56	.3	–	–	.84	.2	Compound
1.78	11.44	7	–	–	15.35	3.5	Compound
.16	.16	.09	–	–	.45	.1	Compound
–	.20	.01	1.29	1.8	1.81	.4	Compound
–	–	–	–	–	.45	.1	Compound
–	–	–	–	–	.13	.03	Compound
–	.03	–	–	–	.10	.02	Compound
–	–	–	.05	.07	.19	.04	Compound
24.48	143.18 (10.27)	–	64.80 (10.38)	– (15)	391.89 (55.18)	– (12)	
89	–	87.5	–	94	–	91	
3.11	19.89	12.1	2.17	–	26.51	–	
11	–	–	–	3.1	–	8.4	
–	.20	.12	1.29	–	2.26	.5	
–	–	–	–	1.8	–	–	
–	.03	–	.05	.1	.42	.1	
–	–	–	–	–	–	–	
27.59	163.60	–	68.31	–	431.08	–	

[p. 70A - iii]

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

241

ZUARUNGA

Mixtures of Crops	1932		1934*		1935*	
	Unmanured	Manured	Unmanured	Manured	Unmanured	1
Early millet ... ... late millet and groundcrops (neri and cowpeas)	397 (4 535	625 (9) 762	254 (4) 480 (4)	344 (7) 444 (7)	355 (14) 291	
Early millet guinea corn and groundcrops	286 (40) 422	528 (14) 574	204 (20) 507	270 (4) 653	517 (10) 339	5 5
Early millet late millet guinea corn and groundcrops	384 (29) 125 350 —	406 (9) 100 461 —	203 (4) 175 320	—	—	
Late millet and groundcrops	282 (9)	—	246 (1)	—	—	
Guinea corn and groundcrops	413 (4)	—	—	—	210 (2)	
Late millet guinea corn and groundcrops	186 (2) 82 (2)	—	—	—	—	
Rice	350 (1)	—	—	—	—	
Late millet groundnuts	159 (13) 582	—	156 (4) 1140	—	—	
Legumes— groundnuts	560 (35)	—	820 (3)	—	860 (15)	
Bambarra beans	487 (5)	—	—	—	—	
Groundnuts Bambarra beans	247 (7) 132		885 (2) 78	—	—	
Cowpeas	78 (123)	102 (49)	64 (29)	77 (13)	106 (24)	
Colsus potatoes	357 (10)	—	—	—	—	
Sweet potatoes	4284 (6)	—	—	—	—	
neri (Cucumis melo)	23 (123)	28 (48)	19 (23)	11 (27)	56 (24)	

*Compound farms only.

**Records from two compounds at Chana and two a

[p. 70B-i]

APPENDIX II—TABLE 6.

241

North Mamprusi, 1932-1936. (All yields in lbs. per acre. Figures in bra

ZUARUNGA AREA

1934*		1935*		1936*		Summary		193
d	Manured	Unmanured	Manured	Unmanured	Manured	Unmanured	Manured	Unmanured
)	344 (7) 444 (7)	355 (14) 291	— —	337 (11) 411	— —	370 (69) 462	502 (16) 623	203 (11) 329 (11)
)	270 (4) 653	517 (10) 339	560 (6) 588	410 (6) 501	550 (3) 744	304 (76) 450	500 (27) 608	268 (36) 272
)	—	—	—	—	—	362 (33) 133 346	406 (9) 100 461	233 (62) 184 182
)	—	—	—	—	—	278 (10)	—	207 (38)
	—	210 (2)	—	—	—	345 (6)	—	126 (27)
	—	—	—	—	—	186 (2) 82	—	118 (22) 91
	—	—	—	—	—	350 (1)	—	632 (11)
·)	—	—	—	—	—	158 (17) 725	—	106 (4) 623
:)	—	860 (15)	—	—	—	660 (53)	—	631 (12)
	—	—	—	—	—	487 (5)	—	—
:)	—	—	—	—	—	388 (9) 120	— —	469 (25) 83
·)	77 (13)	106 (24)	81 (16)	93 (11)	—	80 (187)	95 (68)	49 (191)
	—	—	—	—	—	3572 (10)	—	1662 (6)
	—	—	—	—	—	4284 (6)	—	8400 (2)
3)	11 (27)	56 (24)	45 (16)	—	—	27 (170)	26 (91)	51 (196)

·pounds at Chana and two at Navrongo.

[p. 70B-ii]

NDIX II—TABLE 6.

241

cre. Figures in brackets denote number of sample plots from which each m

mary	NAVRONGO AREA						Summ
	1934		1935		1936**		
Manured	Unmanured	Manured	Unmanured	Manured	Unmanured	Manured	Unmanured
502 (16) 623	203 (11) 329 (11)	— —	146 (3) 403	985 (1) 280	—	—	191 (14) 330
500 (27) 608	268 (36) 272	395 (13) 395	377 (16) 352	821 (16) 458	497 (1) 240	—	305 (53) 295
406 (9) 100 461	233 (62) 184 182	445 (13) 117 500	281 (13) 78 275	572 (15) 72 436	388 (9) 168 483	586 (8) 87 779	252 (84) 166 228
—	207 (38)	—	284 (9)	—	—	—	222 (47)
—	126 (27)	—	292 (5)	—	—	—	152 (32)
—	118 (22) 91	— —	82 (1) 620	— —	— —	— —	116 (23) 113
—	632 (11)	—	746 (7)	—	950 (2)	—	703 (20)
—	106 (4) 623	— —	110 (2) 606	— —	— —	— —	107 (6) 617
—	631 (12)	—	540 (3)	—	—	—	613 (15)
—	—	—	—	—	—	—	—
—	469 (25) 83	—	759 (13) 96	—	687 (12) 962	—	597 (50) 153
95 (68)	49 (191)	58 (26)	59 (19)	49 (23)	—	—	50 (210)
—	1662 (6)	—	—	—	—	—	1662 (6)
—	8400 (2)	—	—	—	—	—	8400 (2)
26 (91)	51 (196)	58 (26)	11 (13)	11 (10)	—	—	48 (209)

[p. 708-iii]

241 s from which each mean was obtained.)

			ZEBILLA		
36**	Summary		1936		Summary for all data
Manured	Unmanured	Manured	Unmanured	Manured	Unmanured	Manured
—	191 (14) 330	985 (1) 280	145 (10) 119	378 (17) 241	319 (93) 406	455 (34) 422
—	305 (53) 295	630 (29) 430	160 (11) 257	489 (12) 568	293 (140) 376	553 (68) 525
586 (8) 87 779	252 (84) 166 228	529 (36) 91 463	— —	— —	282 (117) 156 261	505 (45) 93 462
—	222 (47)	—	253 (22)	—	238 (79)	—
—	152 (32)	—	539 (36)	—	356 (74)	—
— —	116 (23) 113	— —	— —	— —	122 (25) 111	— —
—	703 (20)	—	—	—	687 (21)	—
— —	107 (6) 617	—	— —	— —	145 (23) 688	— —
—	613 (15)	—	389 (4)	—	635 (72)	—
—	—	—	—	—	487 (5)	—
—	397 (50) 153	—	— —	— —	565 (59) 148	
—	50 (210)	54 (49)	42 (79)	85 (29)	62 (366)	79 (146)
—	1662 (6)	—	6057 (3)	—	3456 (19)	—
—	8400 (2)	—	—	—	5313 (8)	—
—	48 (209)	45 (36)	—	—	39 (379)	31 (127)

[p. 70B-iv]

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

241

APPENDIX II—TABLE 7.

Analysis of yield data for the more important crops grown in North Mamprusi showing yield per crop, irrespective of mixture.

(Figures in brackets denote number of sample plots from which each mean was obtained.)

Crop	Unmanured or Manured	Zuarungu Area				Navrongo Area			Zebilla	Weighted Mean for all data
		1932	1934	1935	1936	1934	1935	1936	1936	
Early millet ...	Unmanured	353(109)	193 (32)	422 (24)	362 (17)	242(109)	323 (13)	438 (15)	153 (21)	271(358)
	Manured	523 (52)	317 (11)	560 (6)	550 (3)	419 (26)	618 (26)	857 (6)	425 (29)	506(159)
Late millet... ...	Unmanured	349 (80)	248 (25)	258 (19)	411 (10)	185(147)	123 (28)	176 (1)	211 (32)	236(342)
	Manured	431 (18)	308 (11)	—	—	117 (13)	59 (18)	107 (3)	241 (17)	227 (80)
Guinea corn ...	Unmanured	395 (75)	464 (26)	317 (12)	510 (6)	193(154)	322 (35)	535 (20)	473 (47)	326(375)
	Manured	530 (23)	539 (8)	588 (6)	744 (3)	360 (26)	378 (26)	870 (6)	568 (12)	486(110)
Rice	Unmanured	350 (1)	—	—	—	632 (11)	746 (7)	950 (2)	—	687 (21)
Groundnuts ...	Unmanured	489 (67)	757 (13)	860 (5)	—	595 (47)	—	776 (13)	389 (4)	594(169)
Bambarra beans ...	Unmanured	251 (12)	78 (2)	—	—	95 (31)	—	441 (3)	—	155 (48)
Cowpeas	Unmanured	78(123)	64 (29)	106 (24)	93 (11)	49(191)	59 (19)	—	42 (79)	62(366)
	Manured	102 (49)	77 (13)	81 (6)	—	58 (26)	49 (23)	—	85 (29)	79(146)
"Neri"	Unmanured	23(123)	19 (23)	56 (24)	—	51(196)	11 (13)	—	—	38(379)
	Manured	28 (48)	11 (27)	45 (6)	—	58 (26)	11 (10)	—	—	31(127)
Coleus potatoes ...	Unmanured	3,752 (10)	—	—	—	1,662 (6)	—	—	6,057 (3)	3,456 (19)
Sweet potatoes ...	Unmanured	4,284 (6)	—	—	—	8,400 (2)	—	—	—	5,313 (8)

[P. 72 is blank]

7:Lynn G-5 (1932-1936) 1937 FE11 Tallensi FE11

APPENDIX III.

241
824

List of crops more commonly grown in North Mamprusi with their botanic and local native names.

Crop	Nankani	Kassena	Builsa
Early millet (Pennisetum typhoides, var.)	Nara	Chara	Nara
Late millet (Pennisetum typhoides, var.)	Zia	Mumpuana	Zia
Guinea corn (Sorghum vulgare) ...	Tchee*	Yara	Zamonta
Maize (Zea mays)	Kariana	Kamana	Tumbena
Rice (Oryza sativa)	Mui	Mumulinga	Mua
Groundnuts (Arachis hypogea) ...	Sunkpam	Sunoga	Sunkpa
Bambarra beans (Voandzeia subterranea)	Suma	Sinonu	Suma
Geocarpa beans (Kerstingiella geocarpa)	Sumperga	—	Sulumperg
Cowpeas (Vigna spp.)	Tia	Suona	Tua
Yams (Dioscorea spp.)	Nyuya	Pia	Nyuya
Sweet potatoes (Ipomoea batatus) ...	Nyimbemto	Nanuri	Nambanura
Coleus potatoes (Coleus dysentericus) ...	Pearsa	Yia	Pisa
Cassava (Manihot utilissima)	Banchi	Manchi	Banchib
Okra (Hibiscus esculentus)	Ma-ana	Ma-ana	Ma-ana
Hibiscus (short) (Hibiscus sabdariffa)...	Bito	Puora	Suri
Hibiscus (long) (Hibiscus cannabinus)...	Berni	Kasoga	Kasoga
Soup plant (Gynandropsis pentaphylla)	Nangina	Kalema	Karabacho
Neri (Cucumis melo)	Sama	Yakoro	Bura
Calabash (Lagenaria vulgaris)	Tungu	Zonga	Chin
Calabash (bottle shaped) (Lagenaria vulgaris)	Linka	Konkolu	—
Pumpkin (Curcubita pepo)	Yogari	—	—
Bungu (Ceratotheca sesamoides) ...	Suri	Suru	Boarta
Sesame (Sesamum indicum)	Sasam	Buum	Bunsing

*Note.—Tchee is also used as a general term for cereals, rather in the same way that we use the word "corn."

[p. 74 is blank]